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ABSTRACT

This document contains 4 invited papers, 21 refereed papers, 15 reports accompanying refereed posters, 8 reports from invited paper sessions, and 4 reports from invited panel sessions. Selected papers are as follows: "Managed Care Benefits Consumers" (Smith); "The Paradox of Managed Care" (Lieberman); "How Much Is Enough: Feasibility of Welfare to Work for Single Mothers" (Newman, Sharpe); "The Health Sector in Contribution to a Rural Economy: Western New York Region" (Morton, Bills, Kay); "Social and Economic Indicators for Montana Counties" (Haynes, Abdel-Ghany); "Relative Deprivation in Human Capital Investment in Urban Poor and Middle Class Households in Inchon, Korea" (Yoon, Sharpe); "Factors Related to Risk Tolerance: A Further Examination" (Grable, Joo); "Information Disclosure and Consumers' Understanding: A Case Study of New Leasing Disclosures" (Blaine, Hogarth, O'Donnell); "Determinants of Consumer's Debt Repayment Patterns" (Zhang, DeVaney); "Do Consumers Know the Price of Credit? A Comparison of Consumers' Knowledge of Open- and Closed-end Credit" (Lee, Hogarth); "Determinants of Planned Retirement Age" (Yuh, Hanna, Montalto); "Employee Wellness Program Impact on Health Care Costs: Do Participation and Intensity of Participation Matter?" (Haynes, Dunnagan, Smith); "Factors Influencing Flextime Usage among Employed Married Women" (Billings, Sharpe); "The Impact of Health on Consumer Acceptance of Biogenetic Foods: The Case of Celiac Disease Sufferers" (West, Lamontagne, Galibois, Larue); "The Effect of Consumer Label Use on Diet Quality" (Kim, Nayga, Jr., Capps, Jr., Tepper); "Impact Evaluation of a Financial Literacy Program: Evidence for Needed Educational Policy Changes" (Huddleston-Casas, Danes, Boyce); "Developing a

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45th Annual Conference
March 24-27, 1999
Chicago, IL

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Consumer Interests Annual

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Irene E. Leech, Editor

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VOLUME 45

Irene E. Leech
Editor

45th Annual Conference

of the

AMERICAN COUNCIL ON CONSUMER INTERESTS

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EDITOR'S NOTE

The 45th Annual Conference of the American Council on Consumer Interests was held in Chicago, Illinois March 24-27, 1999. Sheldon Danziger, Professor of Social Work in the Center on Poverty, Risk and Mental Health at the University of Michigan began the conference with the Colston E. Warne Lecture, "Welfare Reform and Economic Hardship: Who is Left Behind." Thursday's highlight was a presentation by our own Monroe Friedman from Eastern Michigan University on "Consumer Boycotts: Effecting Change Through the Marketplace." Everyone was still stimulated and involved in the final session, the Esther Peterson Consumer Policy Forum. Richard Smith, Vice President for Public Policy and Research at the American Association of Health Plans and Trudy Lieberman, Health Policy Editor for *Consumer Report*, set the stage for much discussion. Look for the special proceedings submission from ACCI's Health Policy Study Group.

Twenty-one refereed papers were accepted for presentation on topics ranging from low income issues to international concerns to personal finance. Dissertation Award Winner, Parke E. Wilde, presented his research on the food stamp cycle in the first refereed paper session. Attendees heard Applied Consumer Economics Award Winners Rodolfo Nayga, Jr., Sung-yong Kim, Oral Capps, Jr., and Beverly Tepper discuss their work on consumer label use in Friday afternoon's refereed paper session. Thursday's lunchtime refereed poster session 15 presenters tantalized discussion as attendees enjoyed box lunches. Eight invited papers and four panel sessions provided additional depth for the conference.

Program Chairs Jane Kolodinsky and Ray Forgue provided a program that kept participants' interest. Deborah and George Haynes were responsible for the poster session. Jinkook Lee organized exhibits. Many discussions carried into breaks and past the conference ending hour. Participants enjoyed Chicago highlights including wonderful restaurants of many kinds. On Saturday I ventured to museums and others contributed to the local economy.

Amber Wilson, Connie Kratzer and Debbie Elkins worked with me to produce these proceedings. I sincerely appreciate their invaluable assistance. We thank those authors who gracefully accepted and worked within the established page limitations, and those who followed directions for manuscript preparation. Virginia Tech provided the equipment and supplies for this work.

Irene E. Leech
Virginia Tech

1999 ANNUAL ACCI CONFERENCE

Conference Chairs:

Program: Jane Kolodinsky, University of Vermont
Raymond E. Forgue, University of Kentucky

Poster Session: Deborah Haynes, Montana State University
George Haynes, Montana State University

Local Arrangements: Les Dlabay, Lake Forest College

Exhibits: Jinkook Lee, University of Tennessee

Consumer Interests Annual Editor: Irene E. Leech, Virginia Tech

REFEREED PAPER REVIEWERS

Thanks to the following people who so generously served as reviewers for the refereed papers presented at this conference.

Mohamed Abdel-Ghany, University of Alabama
Rosemary J. Avery, Cornell University
William Bailey, University of Arkansas
Judi Bartfeld, University of Wisconsin-Madison
W. Keith Bryant, Cornell University
Mary Carsky, University of Hartford
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ACCI was established in 1953. Over the past 45 years, numerous professionals have contributed their time and energies to serve the ACCI Membership in leadership positions.

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ACCI Newsletter: Les Dlabay
Advancing the Consumer Interest: Norman Silber
The Journal of Consumer Affairs: Claudia J. Peck-Heath

Managed Care Benefits Consumers

Prior to managed care, health care costs in the United States were out of control and there was no system for monitoring quality. Managed care has contributed to the health care system and benefited consumers by improving quality, making coverage more affordable, and broadening benefits offered to consumers. As a result, there is more innovation in the health care marketplace and consumers are more satisfied with their health care coverage. Despite this progress, a number of restrictive legislative proposals would undermine the evolving health care environment in the name of consumer protection.

Richard Smith [1]
American Association of Health Plans

Contributions of Managed Care

Quality

Before managed care, quality assurance and improvement activities were very limited. Medicine was routinely practiced contrary to best medical evidence, and involved tremendous underuse, overuse and geographic variation. However, with the development of management and operational activities prevalent in managed care, such as quality assurance, peer review, and the promotion of clinical practice guidelines, health plans have begun to address these quality issues that plagued the traditional fee-for-service system. The research findings confirm this numerous peer reviewed studies have found managed care quality equal to or better than FFS. [2]

Costs

Health plans have made health coverage more affordable for workers and their families. One study shows that between three and five million Americans who would have lost their employer-sponsored health insurance were able to keep it because health plans brought out-of-control health care costs under control. [3] In addition, health plans have helped achieve increased wages for covered workers and savings for families. [4] These savings would be lost if health care costs were allowed to increase uncontrollably.

Broader Benefits

In addition to providing high quality care at a lower cost, health plans also offer consumers a broader range of benefits. These benefits include preventive benefits such as well-baby care, immunizations and mammograms, as well as disease management and specialty care for diseases such as asthma, cardiology, and cancer. Lower out-of-pocket costs are an additional benefit. Health plan enrollees typically pay $5 or $10 copayments, compared to a 20% cost-sharing requirement generally under FFS. In addition, health plan enrollees typically pay no deductible, compared to deductibles ranging from $229 to $574 under FFS. [5]

Innovations

Health plans have responded to consumers by creating innovative programs to meet their needs. For example, health plans in dynamic markets are directly responding to consumer preferences with a variety of streamlined referral initiatives, as well as offering women members the option of an Ob/Gyn as their primary care physician. [6] Many health plans have also developed coverage options that include coverage of doctors and hospitals outside a selected network. [7] Health plans have been proactive in designing programs that focus on patient education, care coordination, and a team approach to patient care. In addition, as part of their commitment to consumers, AAHP member health plans have adopted a *Code of Conduct*, including a voluntarily-adopted policy on dispute resolution that includes the opportunity for independent medical review of health plan coverage determinations based on a treatment's medical necessity or experimental or investigational status.

Satisfaction

The contributions of health plans have not gone unappreciated — numerous consumer satisfaction surveys show that the majority of consumers rank their satisfaction level for managed care plans within the same range as those for FFS plans. For example, one report indicated that those 65 and under who were identified as in either poor or fair health, 77% of HMO, 78% of PPO, and 77% of FFS members were satisfied with their health care.[8]

The Current Debate

From these examples of how health plans are improving the quality and affordability of care for Americans, it is clear the current debate is going in the wrong direction. The debate has failed to look at the key health care system problems of improving quality, increasing access to health care services, and containing costs, and instead has relied on inaccurate assumptions and incomplete information about health plans.

For example, one of the biggest misconceptions in the debate is that managed care plans are not regulated. In fact, managed care plans are regulated at both the federal and state levels in numerous areas, including quality and access. Additional requirements are imposed by private accrediting bodies and private purchasers.[9]

Two prime examples of how current legislative proposals fail to look at the key health care system problems of increasing quality, increasing access to health care services, and containing costs are the expansion of health plan liability and the establishment of rules that undermine utilization review and quality assurance activities.

Expanding Liability

Expanding liability will not help patients and will not improve quality, but rather would turn back the clock to a failed FFS system. The President's Commission on Health Care Quality stated in its final report that the current liability system applicable to physicians is "perhaps the most significant deterrent to the identification and reduction of errors in the threat of costly, adversarial malpractice litigation." Expanding a system that deters reduction of medical errors cannot benefit consumers. Moreover, expanding liability will have a direct impact on consumers' health care costs. The Barent's Group estimated that expanding liability would increase costs by 2.7%-8.6%. This cost translates into an increase in the number of uninsured of between 561,300 and 2 million.

Undermining Utilization Review and Quality Assurance Activities

Some proposals would require health plans to cover services based on a "generally accepted principles of professional medical practice" standard. These proposals would have the unintended consequence of returning our health care system to the lowest common denominator of medical practice and sending us back to the geographic variation, underuse, overuse and misuse of medical services characteristic of the old-style fee-for-service system. Legitimate plan activities, which are used to improve the quality of care patients receive, such as using evidence-based guidelines, disease and case management, quality assurance, utilization management, and provider profiling, would be compromised.

Conclusion

To move forward, we need to look beyond the myths and misconceptions presented in the name of consumer protection to the facts about how health plans have benefited consumers. The current debate ignores the key issues that challenge our health care system, and in doing so, threatens to dismantle a system that has resulted in improved quality, lower costs, broader benefits, increased innovation, and consumer satisfaction.

Endnotes

[1] Vice President, Public Policy and Research

[2] For example, the Journal of the National Cancer Institute, November 1997. HMO breast cancer patients have survival rates equal to or better than FFS patients, are more likely to receive recommended treatment, and have their cancer detected earlier than FFS patients. For a summary of studies on quality of care in HMOs, see the American Association of Health Plans' Research Brief on Quality of Care and Health Plans, August 1998.

[3] The Lewin Group, 1997. The average wage gain attributed to managed care for covered workers in 1996 was $228-$356, and the total savings attributed to managed care for married couple families in 1996 were $408-$549.

[4] The Lewin Group, 1997. Savings due to managed care means 3-5 million additional Americans would have insurance.

[5] KPMG Survey of Employer-Sponsored Health Benefits, 1998.

[6] GHAA Kaiser Family Foundation, 1994.

[7] AAHP analysis of Barents Group data, September 1997.

[8] National Research Council Survey, 1998. For a summary of studies on consumer satisfaction by health plan type, see the American Association of Health Plans' Research Brief on Consumer Satisfaction Surveys and Health Plans, December 1998.

[9] American Association of Health Plans, The Managed Care Debate: Correcting the Errors and Omissions. April 1998.

The Paradox of Managed Care

Americans dislike managed care, often believing that it means poor care. However, managed care is not the problem. The problem is quality. The task for consumers is to distinguish good from bad managed care.

Trudy Lieberman, Consumer Reports[1]

Why we hate managed care

Managed care has emerged as a favorite target of both the public and news organizations with HMO horror stories often becoming juicy topics for the media, especially television. Why? It is largely because managed care has challenged what we have come to expect as good medicine; that is, lots and lots of services, whether or not they are appropriate. In the public mind, fewer services are equated with poor quality although that is not necessarily the case.

Americans like high levels of technology. MRIs are a good example. Manufacturers stimulated demand for this diagnostic tool, and the public quickly embraced it. MRIs are now used for everything from evaluating sports injuries to detecting serious illness, and in some parts of the country, MRIs are practically on every street corner. People walk in for evaluation, sometimes when the use of the machine may not be warranted. I once interviewed an executive at PacifiCare who gave me one of the best quotes I've ever gotten: "In America," he said, "the medicine man sits at the right hand of God." Indeed we want nothing to come between us and our doctors and the doctor's right to intervene medically however he or she pleases.

Employers flocked to managed care to help rein in health-care costs which were rising in the double digits in the late 1980s and early 1990s. For a time, managed care seemed to be lowering employers' health-care expenses, but how well managed care has continued to hold down costs is debatable. There are signs that costs are again rising--premiums are going up and more costly technology is coming on the market. In the meantime, as managed care firms continue to control the use of medical services, the public will continue to believe they are getting poor quality care when services are scaled back.

Good and Bad Managed Care

The problem is not managed care. It is poor quality medical care that cuts across all delivery systems. Last fall the Institute of Medicine concluded that there are no exemplary models of health plans or providers who deliver care that is uniformly and consistently of the highest quality. Quality problems encompass underuse, which we hear so much about in managed care; misuse of medical services like prescribing antibiotics for colds for which they are ineffective; and overuse, performing an unnecessary procedure that exposes a person to needless risk. Nevertheless, we expect more from managed care when it comes to quality improvement because managed care organizations deal with defined populations which are theoretically easier to monitor.

However, in 1998 when Consumer Reports looked at quality of care in HMOs serving Medicare beneficiaries, we found that they came up short. Some of them did a pretty good job of detecting underuse--too few of their members receiving mammograms, for example. But when it came to overuse and misuse, few HMOs had systems in place to detect problems in those areas let alone programs to correct the problems and improve quality. Consumer Reports found that few managed care organizations had criteria to evaluate whether women were appropriate candidates for hysterectomy. Only half said they had procedures in place to protect members from preventable adverse drug reactions. While some of the plans had computer systems intended to prevent patients from receiving prescriptions that could harm them, none indicated they had evaluated the effectiveness of those programs.

Finding Good Managed Care

How does one separate good managed care from bad? How do you pick a good plan? The movement to commodify health care that is sweeping the country assumes that health care can be chosen like a car or a computer, and report cards issued by states, health plans, and employers are becoming commonplace. Unfortunately it is not that easy. One cannot find the best health plan whose doctors always make timely and correct diagnoses, choose effective treatments, and avoid mistakes. There are no good comparisons of health plans on measures like those, and there probably won't be for a long time. The Hedis indicators now reported by many health plans measure only underuse, such as the proportion of women receiving mammograms or the proportion of heart attack patients who receive beta blockers. They don't touch on overuse or misuse of services that are just as important.

The consumer agenda for managed care should be to educate Americans about the pervasive problems with medical quality; to develop better and more meaningful ways for consumers to make decisions; for example, to move beyond some of the inane and useless "tips" that masquerade as real consumer information; and to make report cards more salient and useful. If report cards were truly imparting good information, the managed care industry would be thinking of ways to make sure the information didn't get out. So far, they are not doing that.

Endnote

[1] Health Policy Editor

Health Policy Issues in the States

ACCI Health Policy Study Group
Jane Kolodinsky[1], University of Vermont
John Kushman[2], University of Delaware
Carole J. Makela[3], Colorado State University
Mary Ellen Rider[4], University of Nebraska

Health care policy has evolved in the states in response to concerns that went unaddressed when federal health care was defeated and as managed care became common. Actions continue as states gain experience and assess policies of those states in the forefront. Concerns as accessibility to coverage and care, cost containment, quality of care, consumer response, and meeting federal guidelines also enter into policy developments.

The passage of the Balanced Budget Act of 1997 required state and federal partnerships to address the health needs of uninsured children. Based on the child's age and family income a state's Children's Health Insurance Program (CHIP) must be approved by the Health Care Financing Administration (HCFA). States have taken one of three approaches to CHIP—developed a separate child health care plan, expanded Medicaid, or a combination of these. Examples of a separate plan include NV, CO, KS, PA, NY; Medicaid expansion—NM, OK, NE, IN, OH; and combination—CA, MI, ME, MS, FL. A benchmark plan provides coverage for in- and out-patient care, medical and surgeon physician care, lab and x-rays, preventive care (well baby and child), mental health, vision and hearing, and prescriptions. A primary goal as these plans are implemented is to ensure that uninsured eligible children become enrolled.

Another health care arena where changes are occurring is mental health. Motivated by the Mental Health Parity Act of 1996 (effective 1/1/1998), health care plans must provide equity in annual and lifetime benefits for mental health as for other health benefits. It does not include limits on outpatient visits, deductibles, or substance abuse. Like most federal mandates, states can choose to go beyond the federal minimums. Despite claims to the contrary increases in health care premiums have risen less than four percent. This policy does not require mental health coverage if not previously provided, small employers (≤ 50 employees) are exempt, as are those who can prove costs will increase more than one percent. Twelve states have enacted laws that provide benefits beyond the minimums—AR, CO, CT, IN, ME, MD, MN, NH, NC, RI, TX, and VT. Their coverages may be expanded by definition of mental illness, including substance abuse, increasing minimum benefits and approved providers, and exempting fewer employer plans.

Growth of managed care has motivated a variety of policies related to patients' rights/protections and quality of care. These usually address one or more of these care issues—access to emergency care, choice of primary care physician and referrals, mandated coverage, prescription choices, consumer grievances, quality disclosure, and confidentiality. Policies directed at the managed care organizations relate to its structure and the medical credentials of its directors and whether the organizations can be held liable. Vermont has the most consumer protections and South Dakota has the least according to a study of Families USA Foundation.

Numerous opportunities exist for consumer education and information programs and research related to health policy. With both rapid growth and frequent changes, consumers need unbiased information to make sound choices among health care plans, providers, and treatment options. Research questions that address these issues include

How understandable is available information for consumer decision making?
How well are the policies serving intended purposes? Are they in the consumer interest?
Are certain states' policies more successful than others? Why?
Are policies ensuring equitable access to quality health care?
Are state policies supplanting the need for federal policy?

Health Care Information and Quality—Acronyms and Websites

Agency for Health Care Policy and Research (AHCPR) supports research designed to improve the quality of health care, reduce its cost, and broaden access to essential services. http://www.ahcpr.gov/

American Accreditation HealthCare Commission/URAC (AAHC/URAC) a not-for-profit entity founded in 1990 to establish accreditation standards for managed health care. http://www.urac.org/

The Consumer Assessment of Health Plans (CAHPS), a joint initiative of AHCPR and HCFA, gives Medicare beneficiaries enrolled in managed care organizations information on selecting high quality health plans and services. A 5-year project that helps consumers identify the best health care plans and services for their needs. CAHPS' goals are to (1) develop and test questionnaires that assess health plans and services, (2) produce easily understandable reports for communicating survey information to consumers, and (3) evaluate the usefulness of these reports for consumers in selecting health care plans and services. http://www.ahcpr.gov/qual/cahps/dept1.htm

Families USA Foundation is one of the best sites for health insurance/care coverage, Medicaid, CHIP, Medicare, and related policy issues. http://www.familiesusa.org.

The Federal Employees Health Benefits (FEHB) Program offers federal employees the widest selection of health plans in the country. The Office of Personnel Management (OPM) administers FEHB. http://www.opm.gov/insure

The Foundation for Accountability (FACCT), a not-for-profit organization dedicated to helping Americans make better health care decisions, is a leader in developing quality measures. http://www.facct.org/

Health Care Financing Administration (HCFA) administers the Medicare, Medicaid and Child Health Insurance Programs. http://www.hcfa.gov/. Other sites with extensive coverage of CHIPs include the American Academy of Pediatrics http://www.aap.org/; the Children's Defense Fund http://www.aap.org/; and The Urban Institute's Assessing the New Federalism, http://newfederalism.urban.org/

Joint Commission on Accreditation of Healthcare Organizations (JCAHO) is a quality oversight body for health care organizations and managed care in the United States. http://www.jcaho.org/

National Committee for Quality Assurance (NCQA) is an independent, non-profit organization that assesses and reports on the quality of care delivered by managed care organizations. http://www.ncqa.org/

National Conference of State Legislatures http://www.ncsl.org/programs/health/. Also see March 1999 *State Legislatures* "Managed Care: Boon or Bane?" http://www.ncsl.org/programs/pubs/prmag.htm

National Mental Health Services Knowledge Exchange Network covers mental health related issues including studies exploring the costs and effects of parity. http://www.mentalhealth.org.

National Network for Health sponsored by the Consumer & Community Health Policy Work Group offers links on policy information, educational materials, community health decision-making tools, and health policy sites. http://www.nnh.org

Quality Measurement Advisory Service (QMAS) assists state and local health care coalitions, purchasing groups and health information organizations in their efforts to measure health care quality for value-based purchasing and other purposes. QMAS is a not-for-profit collaborative effort of the Foundation for Health Care Quality, the Institute for Health Policy Solutions, and the National Business Coalition on Health. http://www.qmas.org/

Endnotes

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A Hundred Years of Consumer Boycotts

This hour-long presentation outlines the major points covered in a new book by the speaker. The Routledge 1999 publication, entitled Consumer Boycotts: Effecting Change Through the Marketplace and the Media, examines American involvement with consumer boycotts over the course of the 20th century.

Monroe Friedman, Eastern Michigan University[1]

Despite the marked increase in the number and variety of consumer boycotts in recent years very little is known about these controversial instruments of social and economic protest; this book fills this knowledge gap by setting forth a comprehensive conceptual framework that is used to further understanding of a wide range of consumer boycotts. And, as the book makes clear, the range of consumer boycotts has indeed broadened as have the tactical approaches taken by boycott organizers.

In contrast with their turn-of-the-century emphasis on labor issues and consumer economic concerns, boycotts now focus on a large diversity of topics, including the rights of various groups (such as women, gays, and ethnic, racial and religious minorities) as well as such issues as animal welfare, environmental protection and the moral tone of television programs. Tactical changes have also shifted substantially from an emphasis on the marketplace (cutting consumer sales of boycotted goods) to one on the media (undermining the public image of the targeted firm by securing prominent news coverage of the boycotters' criticisms of the firm's policies).

The resulting changes in boycott substance and style over the years reflect larger changes in the social and economic fabric of 20th century life in America - changes that the book documents and interprets in a manner which offers new insights and understandings to a protest mechanism which is as old as the nation itself.

Endnote

[1] Professor, Department of Psychology

The Monthly Food Stamp Cycle: Shopping Frequency and Food Intake Decisions in an Endogenous Switching Regression Framework[1]

Mean food spending by food stamp households peaks sharply in the first three days after benefits are received. For those who conduct major grocery shopping trips only once per month (42 percent of all food stamp households), mean food energy intake drops significantly by the fourth week of the month. For the remaining households, intake remains steady over the month. Therefore, an empirical model simultaneously accounts for shopping frequency and food intake decisions over time.

Parke Wilde, Economic Research Service[2]
Christine K. Ranney, Cornell University[3]

This paper makes two contributions to the study of food demand by U.S. food stamp recipients. First, it employs nationally representative data to describe and measure monthly cycles in food expenditure and food intake. Second, because the food intake cycle is found to depend on the frequency of major grocery trips, the paper develops and estimates an econometric model of consumers' simultaneous shopping frequency and food intake decisions in two halves of the food stamp month. The econometric results suggest implications for policies that affect the frequency of grocery shopping.

Understanding the monthly food stamp cycle is important for policy-makers, who are concerned about periodic or episodic hunger among low-income Americans (Food and Consumer Service, 1994). It is also important for applied economists, because ignoring this type of cycle can induce inefficiency in food demand estimates using survey data where food expenditure or food intake information is collected for short periods (Fraker, 1990). For econometric models with limited dependent variables, which account for the "kink" in the budget constraints of food stamp recipients (Moffitt, 1989; Wilde & Ranney, 1996), ignoring the food stamp cycle may produce biased estimates as well.

The need for further research on the food stamp cycle has been identified previously. In his 1990 review of the literature on the Food Stamp Program, Fraker observed, "Despite the fact that it may enhance our understanding of why econometric studies show that food stamps have a much larger effect on food use than does cash income, research on the existence and nature of this cycle has been scarce."

Data Sources

The analysis here uses expenditure data from the Consumer Expenditure Diary Survey (CEX) for 1988-1992 and intake data from the Continuing Survey of Food Intakes by Individuals (CSFII) for 1989-1991. The CEX reports each household's daily expenditures over one or two weeks. The CSFII reports each individual's daily food intake over three days. The descriptive results below employ these individual food intake data from the CSFII. However, these data are aggregated to the household level for the econometric analysis, because all income variables and many demographic variables are only known at the household level. The main dependent variable in the econometric analysis is household food energy intake as a proportion of the Recommended Dietary Allowance (RDA) for food energy. This dependent variable is calculated as the sum of all members' food energy intake divided by the sum of all members' reference food energy intake levels in the RDA, where each member's reference level is based on that member's age, sex, and pregnancy/lactating status.

Both surveys report the date on which food stamps were most recently received and the dates to which food expenditure or intake data refer, so the number of days since food stamps were received can be calculated by subtraction. Therefore, although the data are cross-sectional, we can measure patterns in mean expenditure and intake over the food stamp month.

The number of observations from the CEX is large (2,875 food stamp consumer unit observations on 12,308 days with complete information). These expenditure data allow adequately precise comparisons of mean food expenditure on each day of the food stamp month. The number of food intake observations from the CSFII is smaller (the descriptive results use observations for 1,516 individuals and the econometric estimation uses observations for 617 food stamp households with complete information). The food intake sample sizes place limits on how finely we may subdivide the sample. The descriptive results below report food intake for each of the four weeks of the month, and the econometric work divides the month into two halves.

Monthly Patterns in Mean Food Expenditure and Food Intake

The monthly pattern in mean food expenditure is striking (figure 1). Mean daily expenditure per person on food at home peaks sharply in the first three days of the food stamp month and flattens out at a much lower level for the remainder. Foods that are purchased proportionately most heavily at the start of the month include some that are easily stored for consumption throughout the month, such as grains or canned vegetables, and some foods that are relatively perishable and probably represent some degree of splurging, such as seafood and miscellaneous dairy.

The monthly pattern in food intake is more moderate, and it depends on how frequently the household conducts major grocery shopping trips (figure 2). Households that conduct a major grocery shopping trip more frequently than once per month are defined as "frequent" shoppers. Households that conduct such trips once per month or less frequently are defined as "infrequent" shoppers. For frequent shoppers, mean food energy intake remains steady during the four weeks of the food stamp month. For infrequent shoppers, mean food energy intake falls from 83.0 percent of the RDA in first week to 73.4 percent of the RDA in the fourth week. A t-test finds that the difference between food energy intake in the first and fourth weeks is statistically significant at the .05 level.

The food intake pattern for infrequent shoppers is notable, because food stamp recipients are more likely than low-income nonrecipients to be infrequent shoppers. Using the CSFII data, 42 percent of food stamp households were classified as infrequent shoppers. Only 16 percent of a comparison group of low-income nonrecipients were classified as infrequent shoppers. This comparison is imperfect, because even low-income nonrecipients may have higher average incomes than food stamp recipients, but the large difference in shopping patterns is suggestive. The main descriptive result, which motivates the analytic work to follow, is that frequent shoppers appear to avoid monthly cycles in food energy intake through successful food purchase and storage behaviors, but infrequent shoppers experience a significant drop in food energy intake at the end of the food stamp month.

Figure 1
Food Expenditure by Consumer Units, At-Home and Away-From-Home

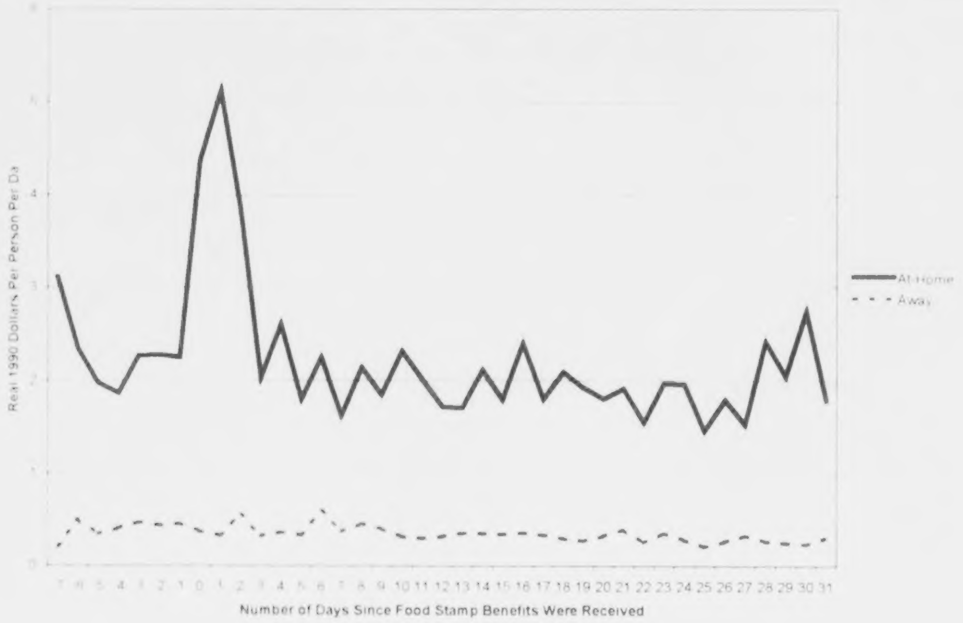
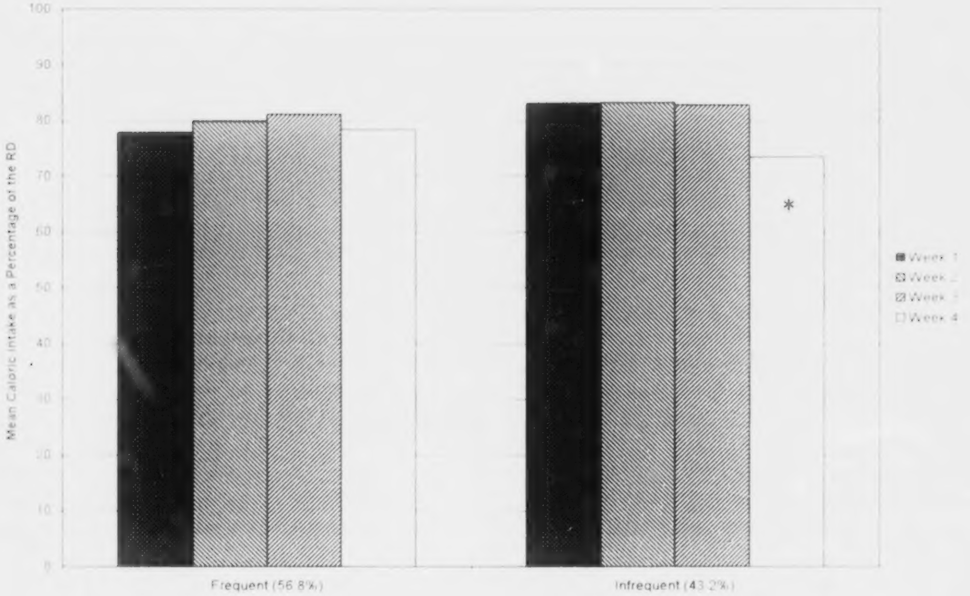


Figure 2
Food Energy Intake by Individuals, According to Shopping Frequency



Theoretical and Econometric Approach

The direction of causation for this relationship between food shopping and food intake is not obvious. It has been suggested that some households may experience low food intake at the end of the month because they were not "frugal" enough to save their food stamp resources for a longer period. Alternatively, we suggest that households facing transportation difficulties, time constraints, or stigma may choose to conduct a major grocery trip with food stamps only once monthly, and they may have trouble storing food for consumption four weeks later as a consequence. The theory employed here supposes that consumers weigh the disadvantages of frequent major grocery trips (loss of leisure time, stigma, etc.) against the advantages (less food spoilage, less need for smaller trips to closer, higher-priced stores toward the end of the month). This theory supports a tractable econometric model: an endogenous switching regression model where the consumer simultaneously chooses a shopping frequency regime and food intake levels in each half of the month. Details of the linkage between the theoretical and empirical specifications are available in Wilde and Ranney (1999), but the structure of the main econometric model may be explained briefly here.

We consider two time periods (t=1,2), representing the two halves of the food stamp month, and two shopping regimes (d=0,1), respectively denoting "infrequent" and "frequent" shopping patterns. We estimate regression equations for household food energy intake (defined in the data section above) under the two shopping regimes and, simultaneously, an equation reflecting the household's choice of one shopping regime or the other. Some unobserved household characteristics that affect the shopping regime decision may also affect food intake, so in principle the error terms in these regression equations may be correlated. Thus, the equations are estimated jointly by maximum likelihood.

We begin with a specification for the food intake functions that permits nonlinear (quadratic) Engel curves and distinct marginal effects for food stamp benefits (S) and cash income (C):

$$F_t^d = \beta_t^{0d} + \beta_t^{1d} S + \beta_t^{2d} S^2 + \beta_t^{3d} C + \beta_t^{4d} C^2 + \beta_t^{5d} Z^t + \varepsilon^d \qquad (1)$$

where Z^1 is a vector of the observed household characteristics that affect food intake, ε^d is a normally distributed disturbance, and the βs are parameters to be estimated. For notational convenience, we suppress a subscript i indicating that each independent variable and disturbance may differ across households.

The regression equation for the shopping regime choice employs a continuous latent index variable (V^*), as in a probit model. The dichotomous regime choice is $d = 1$ when V^* is positive, and $d = 0$ otherwise. The functional form for the regime choice equation, like the food intake equation above, initially includes separate linear and quadratic terms for food stamp benefits and cash income:

$$V^* = \gamma^0 + \gamma^1 S + \gamma^2 S^2 + \gamma^3 C + \gamma^4 C^2 + \gamma^{5'} Z^1 + \gamma^{6'} Z^2 + \varepsilon^v \qquad (2)$$

where Z^2 is a second vector of observed household characteristics, ε^v is a normally distributed disturbance, and the γs are parameters to be estimated.

We also consider a more parsimonious special case. Using asymptotically equivalent Wald and Likelihood Ratio statistics, we consider the joint hypothesis that the parameters on the quadratic terms in (1) and (2) are zero and that food stamp benefits and cash income have the same marginal effect on the dependent variables. Based on these hypothesis tests, this special case is chosen as our preferred specification.

The independent variables in Z^1, which affect both the shopping regime choice and the conditional food intake functions, were chosen on grounds of their usefulness in previous food stamp research and their availability in the data set. They include household size in adult male equivalents (AME) and binary variables for cash welfare receipt, female headship, participation in the WIC program, urban residence, and residence in the Southern states. The vector Z^2 includes independent variables that affect the shopping regime choice, while having no effect on food intake conditional on the shopping regime choice. This vector, which appears in equation (2) but not in equation (1), is required to avoid nonlinear identification that relies entirely on the normality assumption in the specification of the stochastic terms. The only variable in the CSFII that could be assigned to Z^2 *a priori* is the distance to the grocery store where major grocery shopping trips occur.

Econometric Results

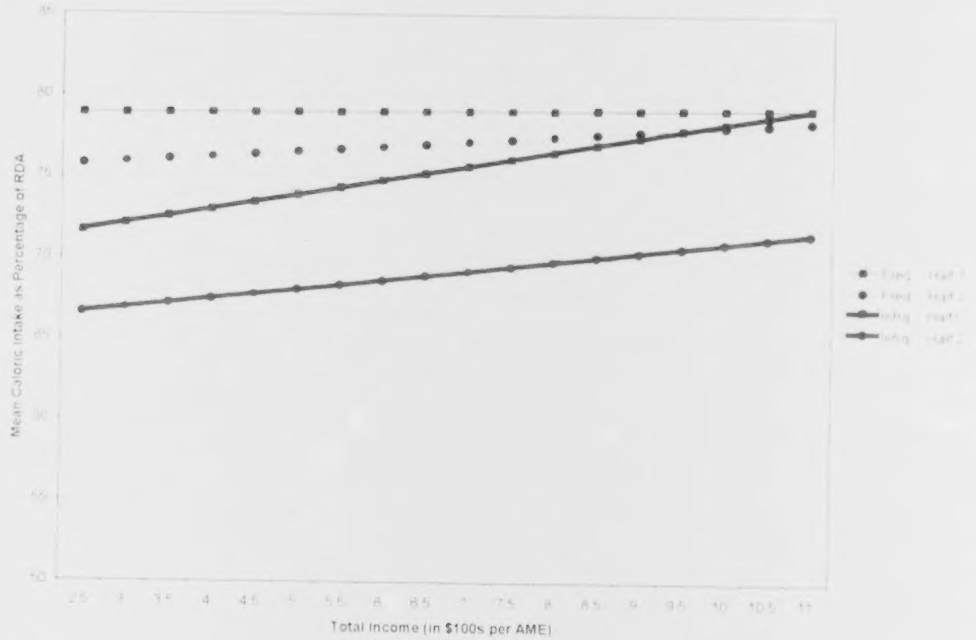
This section presents results for the final specification discussed above, which has identical food stamp and cash income effects and no quadratic terms. Parameter estimates for food energy intake under the two shopping regimes appear in table 1. There are four parameters for the effects of total monthly income (food stamp benefits plus cash income). Each parameter represents the marginal effect of total income on a latent food intake variable for a particular shopping regime in a particular half of the month. These parameters may in principle differ from the marginal effect of total income on expected food intake for participants who are actually observed in the two shopping regimes, because the latter marginal effect requires an adjustment for self-selection into shopping regimes. As we report below, however, the estimated covariances that would indicate such self-selection are not statistically significant.

Table 1
Regression Estimates for Food Energy Intake Under Two Grocery Shopping Regimes

	Regime 0 (R0)			Regime 1 (R1)		
	Estimates		Std. err	Estimates		Std. err
Dum. 1st Half Month	56.437		14.667	77.658		5.940
Dum. 2nd Half Month	52.144		14.867	73.830		6.072
Total Income * 1st Half	0.890		0.785	0.041		0.429
Total Income * 2nd Half	0.580		0.464	0.317		0.378
Household Size	4.797	**	1.488	0.364		1.229
Dum. Welfare	1.063		3.583	6.281	**	2.913
Dum. Female Head	2.591		3.781	-0.227		2.895
Dum. WIC	8.420	**	3.584	6.573	**	3.282
Dum. Urban	0.761		3.043	-5.474	**	2.550
Dum. South	1.207		3.375	-3.100		2.854

Data: Continuing Survey of Food Intake by Individuals, USDA.
Note: * Indicates significant at alpha = .10, one-tailed test. ** Significant at alpha = .05.

Figure 3
Engel Curves for Food Energy Intake in Each Time Period and Shopping Regime



For the frequent shopping regime (Regime 1), the marginal effects of total income on latent food intake in the two periods are positive but very near zero and not statistically significant. The p-values for one-tailed z-tests of the null hypotheses that the true parameters are zero are 0.46 for the first half of the month and 0.20 for the second half. Thus, food energy intake does not appear to increase with additional total income under the frequent shopping regime. For the infrequent shopping regime (Regime 0), the estimated marginal effects of total income on latent food energy intake in the two periods are positive and larger than the comparable parameters under Regime 1, although they still fail to register as statistically significant at conventional levels. The p-values for one-tailed z-tests of the null hypotheses that the true parameters are zero are 0.13 for the first half of the month and 0.11 for the second half. Thus, we cannot rule out sampling variation as an explanation for this observed effect.

The four Engel curves corresponding to these results are illustrated in figure 3, where total income varies from approximately the 10th percentile to the 90th percentile of the low-income sample and other variables are held constant at their mean values. The frequent shopping regime has the highest levels of predicted latent food energy intake at all levels of total income. The infrequent shopping regime has lower predicted latent food energy intake in both halves of the month. The fall in food intake from the first half of the month to the second is greater under the infrequent shopping regime than under the frequent shopping regime.

The parameter estimates for the regime choice equation (2) are not displayed here, but the main results are as follows. Cash welfare participation, female headship, urban residence, residence in the U.S. South, and increased distance to "major" grocery store each significantly reduces the probability of shopping frequently. By contrast, although parameter estimates for total income and household size are positive, as one might expect, they are not significantly different from zero. The final category of econometric results concerns the cross-equation covariances between the error terms in the regime choice and food intake equations. These covariances are small and not significantly different from zero. Thus, although one could not have known so ahead of time, endogenous self-selection into the two shopping regimes did not prove an important consideration in the empirical estimation.

Policy Implications

This research focuses attention on how policies that affect shopping frequency could in turn affect the monthly cycle in food intake for food stamp recipients. For example, municipalities often express concern about

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attracting or retaining supermarkets in low-income urban areas. In terms of our econometric model, such policies affect the distance households must travel to the store where they conduct their major grocery shopping. The econometric results suggest that increased distance to the grocery store is significantly associated with lower probability of choosing the frequent shopping regime, which has a less severe monthly cycle in food intake. However, the magnitude of this effect in our estimates is not large enough to be an important policy consideration.

A policy with potentially greater impact is the recent introduction of Electronic Benefit Transfer (EBT) systems, using plastic cards akin to automatic teller cards, in place of traditional food stamp coupons. Thirty-five states and the District of Columbia use EBT systems, and 27 of these systems are implemented statewide. From the point of view of traditional consumer demand theory, this change might seem minor in the sense that it affects neither total household resources nor the legal requirement that food stamp benefits are spent on food. In the framework of this paper, however, certain features of EBT seem more important. For example, if EBT reduces the stigma associated with using food stamps, reduces recipients' fear of theft, or improves their ability to budget over the month, one might anticipate an increase in the propensity to choose the frequent shopping regime. Moreover, because the routine updating of benefits is implemented electronically under EBT, the new technology would make it less expensive to deliver benefits in smaller portions more frequently than once per month. Though research would be required to demonstrate so, we would foresee a sharp increase in the proportion of frequent shoppers under such a policy.

The potential advantages of updating food stamp benefits more than once per month would have to be weighed against the restrictions it might place on household budgeting and preferences. Perhaps surprisingly, this change was recommended by some food stamp recipients themselves in focus group discussions conducted as part of a food stamp cash-out experiment in San Diego (Ohls et al., 1992). The merits and demerits of such a proposal would be a worthwhile topic of future research as post-EBT data sources become available. For now, the contribution of this paper is to suggest that policy instruments other than the food stamp benefit schedule are available to influence shopping frequency and, as a consequence, to affect the monthly cycle in food intake.

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Endnotes

This paper is excerpted with permission from a forthcoming article in the American Journal of Agricultural Economics (Wilde & Ranney, 1999). The reader is referred to the full article for further details that have been omitted for reasons of space. This research is based originally on several sections from Wilde's 1998 dissertation in the Department of Agricultural, Resource, and Managerial Economics (ARME) at Cornell University.

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How Much is Enough: Feasibility of Welfare to Work for Single Mothers

Consumer Expenditure Survey data for 1995-96 were used to compare expenditure levels and characteristics of single mothers receiving welfare to those who do not and to develop regression based estimates of basic expenditures. Welfare recipients were generally younger, had more children, less education; were more likely to be nonwhite and rent, less likely to receive alimony or child support. Estimates of basic expenditures indicate full-time employment at the minimum wage is insufficient to cover basic expenses.

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Introduction

The Personal Responsibility and Work Opportunity Reconcilement Act (PRWORA), signed by President Clinton in August, 1996 replaced the existing federal welfare system with block grants to the states and altered welfare eligibility. A significant feature of the new law that "ended welfare as we know it" is the five year lifetime limit on receiving welfare and the requirement that recipients begin working within two years after receiving benefits (Greenberg and Savner, 1996).

Single mothers are disproportionately represented among the poor, and hence among welfare recipients. Ruggles (1992) found that whether one measured poverty using the official thresholds, 50% of median income, a measure based on housing consumption or a measured based on an updated food multiplier, female headed households represented the highest percent of the poor in 1988 compared to other family types. Conditions had not changed by 1997; poverty was still higher for female headed households, as was their participation in public assistance programs. Currently, more than one-half of all single mothers and their children fall below the official poverty threshold (Dalaker and Naifeh, 1998; US Bureau of the Census, 1998). Triest (1994) found poverty rates for female headed households with preschool aged children were almost six times higher than the rates of other family types. Half of all mothers raising children alone rely on welfare to meet their basic expenses (Edin and Lein, 1997). To realize the goal of welfare to work for single mothers, former welfare recipients must earn enough to cover basic expenses. The purpose of this paper is: (1) to compare the expenditure levels and characteristics of single mothers who receive welfare to those who do not receive welfare and (2) to develop regression based estimates of basic expenditures of single mothers.

Review of Literature

Certainly, food, clothing, shelter are basic expenditures. As a support program for the poor, welfare has focused on such basics in the form of food stamps and housing subsidies. The official poverty threshold, a measure often used to indicate whether or not a person qualified for welfare receipt, is based on the cost of a minimal diet (Fisher, 1992). Recent critics of the official poverty measure argue that expenditures on items such as clothing, shelter, utilities, household supplies, personal care, and transportation should be used along with food expenditure as measures of basic expenditures when evaluating poverty status (Citro and Michael, 1995).

A "living wage" is the amount of earnings necessary for an individual or family to meet basic expenditures. Items such as food, clothing, housing and utilities, childcare, transportation, basic household and personal care are typically included in calculations of a living wage. Costs for such things as entertainment, gifts, toys, tobacco or alcohol are generally excluded (Carlson and Theodore, 1995; Steuernagle, 1995; Zimmerman and Garkovich, 1998). Early in this century, the living wage concept was used to argue for establishment of a minimum wage (Zimmerman and Garkovich, 1998). In the 1960s, working full time for minimum wage resulted in earnings just above the poverty line; that is no longer true (Whitener and Parker, 1997). Today, full time employment (2000 hours) at the minimum wage of $5.15 per hour would generate an annual before tax income of $10,300. That amount is about $300 below the poverty level for a family of two and over $5000 below the poverty level for a family of four (Whitener and Parker, 1997; Zimmerman and Garkovich, 1998). Consequently, the living wage concept is central to debate about the ability of current welfare recipients to fully fund basic expenditures from labor income.

Expenditure patterns of female headed households have been studied. Using 1972-73 Consumer Expenditure (CES) data, Epstein (1979) found one-parent households spent fewer dollars but a higher proportion of income on food and housing compared to two parent households, despite the fact two parent households were larger and more two-parent households were homeowners. One-parent households spent fewer dollars and a smaller portion of the budget on transportation compared to two parent households. Using the same data, Horton and Hafstrom (1985) found expenditures for total food and food at home were higher for older female headed households. Shelter expenses were lower for those under ages 45-54, but higher for those who were older. Education of the female head was positively associated with spending on clothing, shelter, and household expenses. Black female household heads spent less on shelter, more on food at home and clothing compared to nonblack female household heads. City dwellers spent less on household expenses; rural residents spent less on shelter than small town residents did. Compared to residents of the North Central region, female headed households in the South spent less on shelter while North East residents spent more on total food and food at home.

Using the 1984-85 CES, Lino (1990) found a positive income elasticity for food, clothing, housing, and transportation. Larger households spent more for food and transportation. Female headed households spent significantly more on clothing compared to male-headed households. Household heads aged 30 to 40 spent significantly more for food and transportation compared to younger household heads. Nonwhite household heads spent significantly more than white household heads on food, housing, and transportation. Education and housing expenditures were significantly and positively related.

Passero (1996) used the 1992-94 CES to examine differences between families that did and did not receive welfare benefits (food stamps, government income and housing support, Medicaid, and Supplemental Security Income). Welfare recipients were younger and larger than nonrecipient families and had fewer earners. Recipient families were more likely to be single parent families and renters versus homeowners. Expenditure levels for recipient families were about half that of nonrecipient families. A larger share of the budget was applied to necessities among recipient families.

Zimmerman and Garkovich (1998) estimated the amount of income a single mother with two children would need to cover basic expenses in rural Kentucky. The cost for housing, utilities, child care, gasoline, and car insurance were based on sample data from seven rural Kentucky counties. Estimates for car care expenses, food, health care, and clothing were based on data from the 1994-95 CES for minimum wage income earners residing in the Southern region. They concluded earnings of nearly $20,000 per year or $9.85 per hour net of taxes were needed to meet basic expenses, considerably more than the current minimum wage of $5.15 per hour before tax.

This study expands on previous research in these ways: (1) the broad definition of basic expenditure is based on critique of the official poverty measure (Citro and Michael, 1995; Zimmerman and Garkovich, 1998); (2) expenditures occur prior to PRWORA so cannot be influenced by that act (3) 1995 data reflect spending pattern changes that may have occurred since previous studies were conducted; (4) although similar in concept to Zimmerman and Garkovich (1998), this study focuses on expenditures of a national sample of urban and rural residents; and (5) influence of various socio-economic and demographic characteristics on expenditures are examined and expenditure levels for single female headed households with various characteristics are estimated.

Method

Data

The interview portion 1995-96 Consumer Expenditure Survey was used. Each interview was treated as a separate observation. Approximately 5,000 consumer units are surveyed each quarter in a rotating panel design. Consumer units contribute five consecutive quarters of data; new participants replace about 20% of the sample each quarter (U.S. Department of Labor, 1995).

Sample

Selection rules used in this study were being a complete income reporter and being a single female household head with at least one child under age 18. Sample size was 995.

Empirical Model

The empirical model used in this study is based on neo-classical economic theory. Single female-headed households are assumed to allocate scarce resources among available goods and services so as to maximize utility. Expenditures are assumed to depend on income as well as tastes and preferences. Prices were considered to be constant across all families. The empirical model may be written as:

$$Y = b_0 + \Sigma b_i x_i + e \qquad (1)$$

where Y is the dollar amount of annual expenditures for a given expenditure category; b_0 is a constant term; b_i is a vector of regression coefficients; x_i is a vector of socio-economic and demographic variables; and e is a random error term.

Dependent Variables

The dependent variables were dollar expenditures on food, apparel, housing, utilities, health, transportation, childcare, and other expenses (personal care, entertainment, reading, education, tobacco and smoking, cash contributions, personal insurance and pensions, and miscellaneous) as reported in the summary expenditure categories in the CES (US Department of Labor, 1995). Although treated as a separate category in other studies, in this study, personal care was grouped with other expenditures because annual dollar outlay was relatively small.

Independent Variables

Age of the female household head was measured in years. Age was expected to be positively associated with food expenditures (Horton and Hafstrom, 1985; Lino, 1990). Education was a categorical variable: less than high school, high school degree (reference category), some college, college degree or more. Education was expected to be positively associated with apparel and housing costs (Horton and Hafstrom, 1985; Lino, 1990). Race was coded 1 if white, 0 otherwise. Being white was expected to be associated with higher housing expenditures but lower food and apparel expenditures (Horton and Hafstrom, 1985).

Number of children was a continuous variable. Larger household size was expected to be positively associated with food and transportation expenditures (Lino, 1990).

Family before tax income was measured in dollars. The log of family income before tax was used in the regression analyses to account for nonlinearity. Dummy variables indicated various forms of income receipt. Nonwage income was coded 1 if child support or alimony was received, 0 otherwise. Food in-kind transfers was coded 1 if food stamp receipt was reported, 0 otherwise. Housing in-kind transfers was coded 1 if the household lived in government housing or if government paid part of the housing cost, 0 otherwise. Government money transfer was coded 1 if receipt of public assistance or welfare was reported, 0 otherwise.

Homeownership controlled for differential housing expenses due to maintenance of own home versus a rental property and proxied (albeit crudely) household wealth. Homeowners were expected to spend more on housing and utilities than renters.

Region controlled for regional differences in cost of living. Since the CES only indicates the region of urban residents, region was coded as a set of four categorical variables, coded 1 if an urban resident of a specific region, 0 otherwise. Rural residence was the omitted category.

Findings

Table 1 presents sample characteristics. A t test of mean differences between those who received some form of welfare (government income support or in-kind transfers of food or housing) and those who did not was completed. Not surprisingly, average levels of before tax income and average level of expenditures for all expenditure categories were significantly lower for those who received welfare compared to those who did not. Compared to nonwelfare recipients, welfare recipients were generally younger, had more children, less education, and were more likely to be nonwhite and a renter, less likely to receive alimony or child support.

Table 2 reports regression results for the eight expenditure categories. Results were consistent with previous research (Horton and Hafstrom, 1985; Lino, 1990; Passero, 1996). Age was significantly and positively associated with expenditures for food, utilities, health, and other; significantly and negatively associated with expenditures for apparel, housing, and child care. Heads with less than a high school education spent significantly less on housing, utilities, health, and other compared to heads with a high school degree. Heads with some college spent significantly more on housing, health, and child care, and significantly less for utilities compared to heads with a high school degree. Heads with a college degree spent significantly more on apparel, housing, child care, and other compared to heads with a high school degree. White household heads spent significantly less on apparel and more on health than nonwhite household heads did. Having more children under age 18 was positively and significantly associated with spending on food, apparel, housing, and utilities. Family before tax income was significantly and positively associated with spending on all eight expenditure categories. Those who received in-kind food transfers spent significantly less on housing, utilities, health, child care, and other than those who did not receive such transfers. Those with in-kind housing transfers spent significantly less on housing compared to those without such transfers. Receipt of government money transfers was associated with significantly lower child care expenditures. Homeowners spent significantly more on apparel, utilities, transportation, and other compared to renters. Region of residence mattered only for housing, where all urban residents spent significantly more than rural residents; for transportation, where Southern residents spent significantly more than rural residents; and for child care, where Western residents spent significantly more than rural residents.

Table 1
Characteristics of single parent female headed households that do and do not receive welfare

	Receive Welfare	Do Not Receive Welfare		Receive Welfare	Do Not Receive Welfare
Means			Proportions:		
Before tax family income	**$10,697**[a]	**$23,464**	Education		
Expenditures			< High school	**32**	**11**
Food	**$3,757**	**$4,250**	High school	43	46
Housing	**$4,171**	**$7,339**	Some college	**23**	**30**
Utility	**$1,594**	**$2,227**	College degree	**2**	**13**
Apparel	**$1,120**	**$1,479**	White	**60**	**67**
Child care	**$237**	**$676**	Receive alimony or child support	**26**	**42**
Health	**$204**	**$1,123**	Region		
Transportation	**$2,418**	**$4,709**	Northeast urban	21	17
Other	**$3,194**	**$7,284**	Midwest urban	23	19
			South urban	**23**	**41**
Age of HH head	**32**	**38**	West urban	**24**	**14**
			Rural	9	9
N. children < 18	**2.0**	**1.5**	Home owner	**13**	**47**

[a] Statistically significant differences at the .05 level are indicated in bold print

Expenditure Estimates

The regression equations were used to estimate expenditures for six case scenarios. Case 1 is a single mother aged 35 who has a high school education, is white, with two children. She has no nonwage income, government transfer income or government in-kind transfers for food or housing. The log of median income is used in the estimate. She is a renter in the urban South. Cases 2 through 6 resemble case 1 in every respect except: in case 2 race is nonwhite, in case 3 education is less than high school, in case 4 region of residence is rural, in case 5 the number of children is 3, in case 6 the log of 50% of median income is used.

For each case, estimates for the eight expenditure categories were generated. These were summed and divided by 2000 (standard full time employment hours) to estimate an after tax "living wage." Results were $11.66, $11.79, $10.28, $8.85, $12.47, $9.79, respectively. It could be argued that including "other", a category not used in previous research, makes these estimates high. However, if the estimates are computed for case 1 though case 6 excluding other expenditures from the calculations, the resulting estimated needed wages still remain well above the minimum wage at $9.00, $9.26, $7.97, $6.50, $9.75, and $7.81 respectively. Interestingly, the estimate of $9.89 obtained by Zimmerman and Garkovich (1998) for Kentucky is not too different.

Limitations, Summary and Implications

This study has limitations: (1) the limitations that apply to any expenditure based basic need assessment, of course, apply here as well (see Ruggles, 1992), (2) use of the same empirical model across expenditure categories facilitated comparisons but, given the low adjusted R^2 for some regressions, perhaps other models should be considered (Abdel-Ghany and Schwenk, 1993), and (3) estimates of state level or regional rural expenditures cannot be obtained from the public use CES.

PRWORA mandates a transition from welfare to work. This mandate assumes sufficient wages can be earned by former welfare recipients to cover basic expenses. This study presents evidence that meeting such a mandate is likely to be difficult for single mothers. For the sample cases examined in this study, results indicate that

Table 2

Multiple regression analysis of select characteristics of single parent female headed households on various expenditure categories (unstandardized coefficients)

Variable	Food	Apparel	Housing	Utilities
Age HH head	28.13**	-14.43*	-39.88*	11.26*
Education HH head				
< High school	39.24	-32.64	-832.21*	-329.29***
Some college	152.44	88.35	831.29**	-194.47*
College	438.64	435.83*	6220.11***	-.84
White HH head	275.22	-500.06***	169.83	-116.20
No. Children < 18	684.32***	178.38**	468.26**	180.84***
Log of family before tax income	252.09*	583.11***	1070.95***	182.80**
Receive				
Non wage income	-235.78	92.38	244.68	82.69
Food in kind transfers	-247.69	-289.49	-1371.15**	-231.24*
Housing in kind transfers	-108.03	-113.49	-1580.85***	-108.56
Government money transfers	4.59	281.53	-480.00	28.53
Home owner	306.83	275.32*	11.69	639.30***
Region				
Northeast urban	589.33	3.02	3279.39***	108.37
Midwest urban	134.51	146.48	2116.55***	38.66
South urban	315.36	-27.30	1833.29***	167.56
West urban	-29.67	233.35	4275.29***	-172.98
Constant	-996.75	-3933.74***	-5929.15**	-515.21
Adjusted R^2	.09	.11	.34	.21

Table 2 (continued)

Variable	Health	Transportation	Child Care	Other
Age HH head	15.12**	-17.29	-45.83***	34.40*
Education HH head				
< High school	-150.21**	-860.90	96.84	-682.67*
Some college	181.61*	554.11	426.46***	438.81
College	199.11	359.67	1491.90***	3723.27***
White HH head	247.51**	-616.75	19.45	249.71
No. Children < 18	-2.51	11.54	-29.27	136.83
Log of family before tax income	178.50**	1053.94*	120.63*	1940.29***
Receive:				
Non wage income	26.79	-200.91	75.61	220.31
Food in kind transfers	-568.99***	827.05	-273.60*	-1111.10**
Housing in kind transfers	63.73	1157.71	-1.49	155.15
Government money transfers	-129.91	-355.10	-233.00*	-325.64
Home owner	86.63	4182.59***	103.07	1682.20***
Region				
Northeast urban	79.69	676.01	23.13	603.77
Midwest urban	103.63	379.00	150.43	561.67
South urban	90.09	2575.64*	49.19	605.68
West urban	70.35	2185.44	274.22*	160.80
Constant	-1581.89**	-7830.78	762.40	-15488.70
Adjusted R^2	.20	.07	.23	.47

* $p < .05$, ** $P < .01$, *** $p < .001$

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to cover estimated total expenditures, after tax wages would need to range between $8.85 to $11.79 per hour. When a more conservative estimate that excludes other expenses is used, needed wages after tax range from $6.50 to $9.75. The case results suggest the minimum wage is not likely to be a living wage for single mothers leaving welfare for work.

Those who currently receive welfare are generally younger, with more children, and less education than nonrecepients. Also, recipients are more likely to be nonwhite, rent rather than own a home, and less likely to receive alimony or child support. Of these characteristics, lower levels of education and larger family size present barriers to full-time participation in the labor market and to receipt of wages above minimum wage.

Ceasing government income support does not eliminate the need for education to obtain a job or for dependable, affordable child care and reliable transportation to enable single mothers to keep the job. Failure to attend to these needs means failure of the plan of welfare to work; placing greater demand on social service agencies and informal support networks provided by family, neighbors, and charitable organizations.

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Health Sector Contribution to a Rural Economy: Western New York Region

The health sector in the Western New York region is an important source of employment and economic vitality. The input-output economic model, IMPLAN, is used to calculate employment and personal income multipliers for this region. It is estimated that, on average, a new job in health care is associated with 0.35 additional jobs. A dollar in new personal income for local health care providers generates, on average, $.44 in additional personal income.

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Introduction

Rural community hospitals, nursing homes, health care providers, drug stores and other related services not only contribute to population health status but are also important sources of employment, tax revenues, and indirectly provide revenues for other local businesses. For local leaders to integrate the economic and health status needs of their populations they must have a better understanding of the economic contribution the health sector makes to their region. In this research, the health sector of three contiguous counties in Western New York state is examined using multiple data sources. First, the contributions which the health sector can make to a regional economy is discussed. Then, the theoretical structure of the input-output economic model, IMPLAN, is presented. Next, the economic contributions of the health sector in Western New York State, based on the IMPLAN simulation model, are summarized. Lastly, the implications of these findings and their effects on consumers and rural communities are offered.

The health sector in a regional economy

The dominant industry in the three-county (Allegany, Cattaraugus, and Chautauqua) region of Western New York State is manufacturing which accounted for $3.4 billion or 38 percent of the total output in 1995 (BLS 1996). Services, the second largest industry sector in this region, contributed $1.5 billion or 17 percent of the region's gross output (BLS 1996). The medical sector is by far the largest component of the service sector, accounting for more than a third of all services output and six percent of the total value for goods and services produced in Allegany, Cattaraugus, and Chautauqua counties.

The health sector in a small regional economy is often a major source of employment, provides economic multiplier effects on other local industries, and is one measure of quality of life used by employers and retirees. Health sector employment ranges from hospital and nursing home administrators, doctors, nurse practitioners and professional health care providers to nurses' aides, medical records technicians and accountants to building maintenance and custodial jobs. In this region of study, the health sector contributed 6.5 percent of all employment in 1995 or 8,950 health sector jobs (BLS 1996). Without employment, individuals and families are unable to sustainably live in rural regions. In addition, when individuals are employed locally, they are more likely to make local purchases in support of businesses within the region.

The health sector draws new dollars into a rural economy through Medicare, Medicaid, and commercial health insurance claim payments. In this Western New York region 19.3 percent of the population were 65 years and older in 1993 (US Census Bureau 1998). Health Care Financing Review (1996) reports that in 1994 the average Medicare payment per enrollee was $4,301. For this three-county region, this means that 55,570 Social Security recipients had potentially $239,006,570 Medicare dollars to spend on their health care needs. Where these dollars are spent-at local health care firms or urban based medical complexes-has an impact on the local economy. When patients use out-of-region health care services, these dollars are lost to the region. When patients spend locally, many of these dollars are recirculated in the regional economy when the health sector purchases employee and contract services, supplies, rents, and utilities from local firms.

The health care infrastructure of a region influences it's desirability as a place to live. Retirees are concerned that quality health care services be available to them as they age and experience increasing chronic diseases. Research on predictors of retirement location include safety, recreational facilities, dwelling units, and health care (Doeksen, Johnson, Willoughby 1997). Business facility site selection criteria include health care in the top six quality of life characteristics considered as important (Lyne 1988). Employees of relocating firms want to move to an area that has a good health care infrastructure which assures them access to care when they or family members become ill.

IMPLAN: An Input-Output Economic Model

Policy analysis of counties and regions frequently include economic simulation models (Rickman and Schwer 1995). One of the most widely used input-output economic models in the United States is IMPLAN, a ready-made program developed by the U.S. Department of Agriculture for examining rural industries such as agriculture, forestry, and mining (Charney and Leones 1997). Policy makers and economists have also used IMPLAN to analyze the economic impact of the health sector on rural economies (Doeksen, Johnson, and Willoughby 1997).

IMPLAN disaggregates 528 industry sectors and permits analysis of the linkages among industries within the region. This model uses county economic patterns, employment and household income data to simulate transactions between local industries, sales to local households and exports to other regions to develop economic impact of the health care industry (and other industries in the region) and create income and employment multipliers as summary measures of that position. Once the proportion of each sector's final demand that is associated with the operation of the health care sector is identified, then this portion of the total final demand vector can be pre-multiplied by the Leontief inverse matrix to obtain the economic contribution of the entire health care sector to the regional economies. IMPLAN simulates an input-output model combining three employment data sets: ES202, County Business Patterns, and Regional Economic Information systems (REIS). The foundation of the IMPLAN model is the national input-output tables which are used to create technical coefficients. Bureau of Labor Statistics ES-202 data collected for the mandatory unemployment program form the basic structure of the input-output tables. National costs of production-wages, raw materials, capital- may under or over-estimate actual costs within the region. The assumptions that the input-output simulation makes in each of these reiterations will have important impacts on how well the simulation represents the reality of a specific region.

The IMPLAN health industry consists of four sectors: doctors and dentists, nursing and protective care, hospitals, and other medical and health services. The IMPLAN sectors, doctors and dentists, cover the 1987 Standard Industrial Classifications (SIC) 801 (doctors of medicine), 802 (dentists), 803 (doctors of osteopathy, and 804 (chiropractors, optometrists, podiatrists, and a wide range of other health practitioners such as acupuncturists, audiologists, Christian Scientist practitioners, midwives, naturopaths, physical therapists, psychotherapists, etc.). The IMPLAN sector, nursing and protective care, encompasses SIC 805, which includes skilled nursing care facilities, intermediate care facilities, and miscellaneous other nursing and person care facilities. The IMPLAN sector, hospitals, includes SIC 806 (hospitals). The last health sector, other medical and health services, includes SIC 807 (medical and dental labs), 808 (home health care services), 809 (miscellaneous health services, ranging from medical artists to biofeedback centers to outpatient clinics to childbirth preparatory classes).

Estimates of Economic Multipliers

For the purposes of our study, we have calculated economic multipliers for two variables: total personal income (PI), and employment (EMP). Multipliers for total personal income (PI) report the change in the sum of employee compensation, proprietary income from self-employment, and other property income per $1 of direct increase in regional income or payrolls. Employment (EMP) multipliers account for the total change in total jobs associated with the direct creation of one initial job to produce output going to final demand.

Tables 1 and 2 and Figures 1 and 2 report the total personal income PI and employment EMP economic multipliers estimated in this study. The multiplier results are shown in the context of the underlying direct, indirect, induced and total changes in the economy stimulated by a hypothetical $100,000 increase in the demand for final goods and services for each of the sectors in turn. In terms of employment Table 1 shows a $100,000 increase in the demand for goods and services has the largest total effect (3.25 new jobs throughout the entire economy) if the spending initially occurs in the health care services sector, followed by the trade (2.67 jobs) and other services (2.37 jobs) sectors. The health sector results are dominated by the direct impacts (2.41 jobs within the health sector itself), though the induced effects (local respending of incomes throughout the economy) are also larger (0.57 jobs) than for any other sector. Regarding the employment multipliers, it can be seen that the health care sector has a relatively low multiplier of 1.35. Thus, while the 2.41 jobs directly generated in the health care sector itself outweigh the direct effects of spending in other sectors, spending in the health sector generates additional indirect (0.27 jobs) and induced (0.57 jobs) employment throughout the rest of the economy that is small in relation to the direct effects.

Table 1

Number of jobs stimulated by a $100,000 increase in final demand from each sector*

Aggregated Sector	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier**
Agriculture	0.69	0.22	0.16	1.07	1.55
Mining	0.93	0.18	0.10	1.20	1.29
Construction	0.99	0.28	0.41	1.68	1.71
Manufacturing	0.26	0.12	0.15	0.53	2.09
Transportation and Utilities	0.46	0.27	0.33	1.06	2.29
Wholesale & Retail Trade	2.06	0.16	0.45	2.67	1.30
Finance, Insurance, Real Estate	0.30	0.13	0.12	0.55	1.85
Services, Except Health	1.59	0.28	0.50	2.37	1.49
Health Care Services	2.41	0.27	0.57	3.25	1.35

*Demand was distributed across subsectors consistently with the proportion of total output within the sector
**Multipliers are the ratio of the total/direct effects

Allegany, Chautauqua, and Cattaraugus counties, 1995

Table 2

Personal income generated by a hypothetical $100,000 increase in new production from each sector*

Aggregated Sector	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Multiplier**
Agriculture	$10,054	$3,032	$2,947	$16,033	1.59
Mining	$6,849	$1,017	$1,772	$9,638	1.41
Construction	$27,752	$6,523	$7,719	$41,994	1.51
Manufacturing	$9,357	$3,447	$2,884	$15,688	1.68
Transportation and Utilities	$20,406	$6,534	$6,067	$33,007	1.62
Wholesale & Retail Trade	$32,908	$4,400	$8,402	$45,710	1.39
Finance, Insurance, Real Estate	$6,923	$3,219	$2,284	$12,426	1.79
Services, Except Health	$33,498	$7,716	$9,282	$50,496	1.51
Health Care Services	$39,999	$7,051	$10,596	$57,647	1.44

*Demand was distributed across subsectors consistently with the proportion of total output within the sector
**Multipliers are the ratio of the total/direct effects

Allegany, Chautauqua, and Cattaraugus counties, 1995

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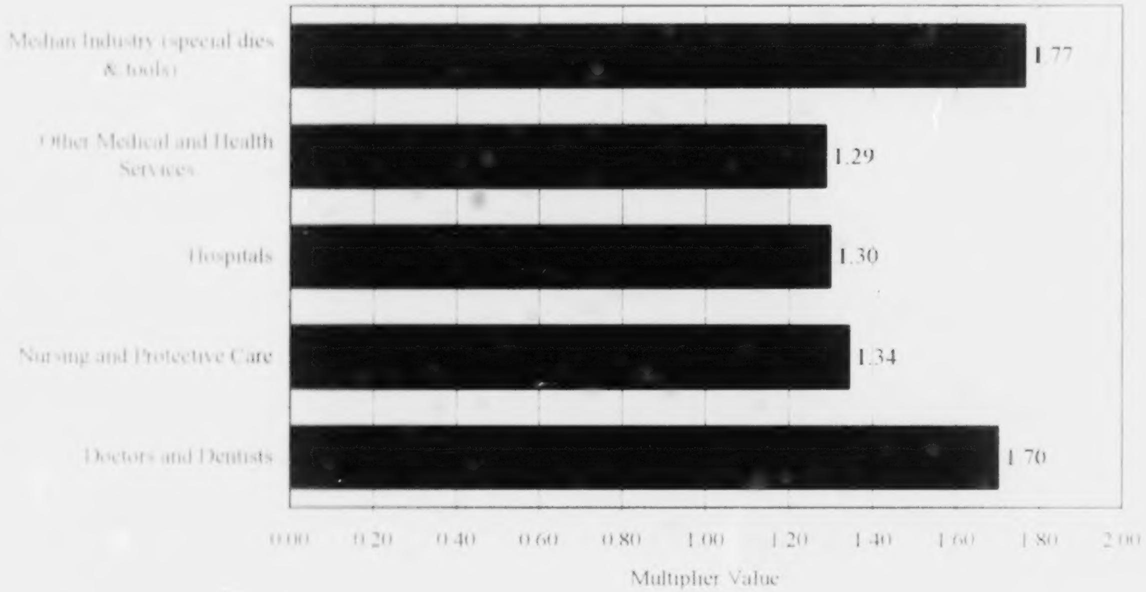
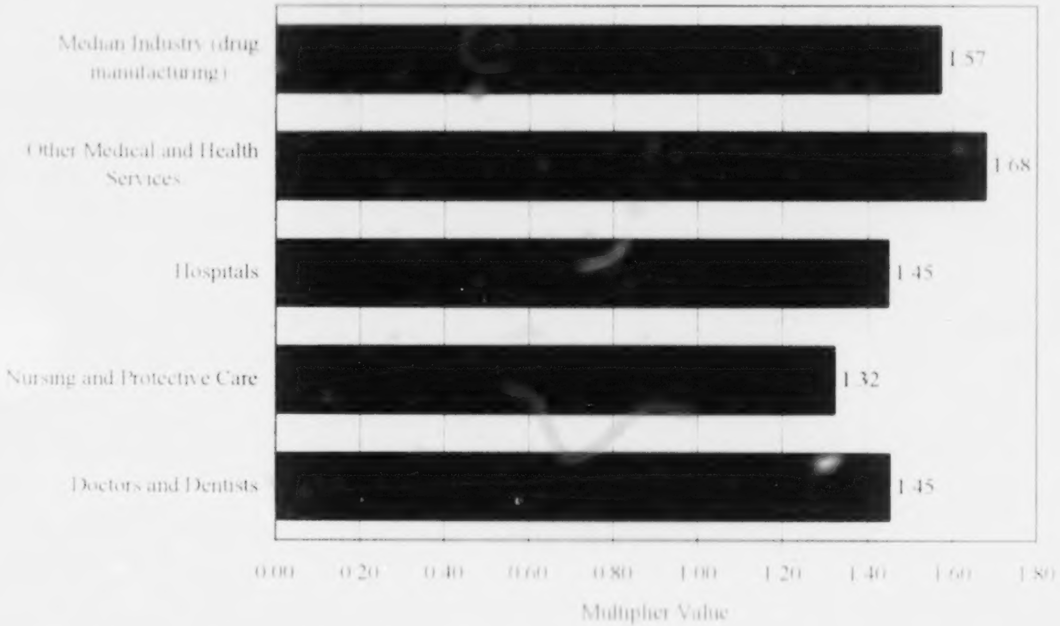
Figure 1. Employment Multipliers: Health Care Sectors and Sector with Median Multiplier



IMPLAN 1995 Allegany, Chautauqua and Cattaraugus Region

Figure 2. Personal Income Multipliers: Health Care Sectors and Sector with Median Multiplier



IMPLAN 1995 Allegany, Chautauqua and Cattaraugus Region

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The pattern looks similar in terms of personal income impacts (Table 2). Total income effects are again greatest in the health care sector ($57,647 in personal income), followed by other services ($50,496) and trade ($45,710). Direct income effects are also largest in the health care ($39,999), trade ($32,908) and services ($33,498) sectors. However, the differences compared to the other sectors are narrower than for the employment impacts. The health care sector multiplier is 1.44. Again this is one of the lower multipliers, signifying that direct expenditures in sectors other than health care have proportionately larger income impacts on other sectors of the economy relative to the initial direct impact within the sector.

This pattern of impacts is generally influenced by three major factors. First, the proportion of the total expenditures going to labor (or labor intensive business/industry) affects both the number of jobs that the initial $100,000 can create directly and the amount of income that is available for household spending on other goods and services. Second, the proportion of the $100,000 that gets spent on locally produced goods and services (i.e., without "leaking" from the economy) varies from sector to sector. Third, in sectors where employee compensation levels are relatively low, the initial $100,000 increase has a bigger impact on creating a large number of (low-wage) jobs, even as personal income generated is more or less constant.

Examination of the subsectors of the health sector in this region show that the doctors, dentists, and other similar care providers subsector has the highest employment multiplier in the sector (1.77) (Figure 1). However, compared to the other industry subsectors in this region, it falls below the median (special dies & tools). Nursing and protective care, hospitals and other medical and health services multipliers fall below doctors and dentists and the median industry employment multipliers. Although other medical and health services subsector has the lowest employment multiplier in the health sector, it has the highest personal income multiplier (1.68) of the sector (Figure 2). It falls above the median industry (drug manufacturing) personal income multiplier for this region. The nursing and protective care subsector has the lowest personal income multiplier (1.32). From these multipliers, it can be estimated that the doctor subsector has the largest potential within the health sector to generate additional jobs in the region. However, other subsectors from other industries are likely to generate more jobs than the doctor subsector. The medical and health services subsector is estimated to recirculate more personal income dollars within the local economy than other subsectors of the health sector. The economic impact of each subsector is influenced by average industry wages, the proportion of industry sector employees who live and make purchases within the region, and the proportion of other non-wage purchases firms make within the region.

Limitations of Multiplier Analysis

Multipliers are constructed based on a "snapshot" of a regional economy. That is, the analysis is keyed to a pattern of economic transactions between firms and the final users of their products for a single year—1995 in this case. Multipliers can go out of date as the "structural" relationships between sectors change. Structural changes can result from technological developments, important shifts in relative prices, regional trade patterns, and several other sources.

Another, and closely related, concern with multipliers is that they best represent the effects of small or marginal changes in deliveries to final demand in any one sector. Large shifts in a regional economic system require a more detailed analysis before their effect on total income or employment can be measured. This is largely because such large shifts rarely occur without important associated structural change.

Finally, our estimates rest on models utilizing local secondary data combined with coefficients from a national model. This procedure avoids the prohibitively high costs of conducting an exhaustive survey of all inter-industry transactions in a regional economy. However, reliance on this procedure requires the assumption that differences between the structure of the local economy and the national economy have been accurately estimated within the model.

Implications for Consumers and Rural Communities

The health sector in this region is an important source of employment and economic vitality. It contributes 8,950 jobs and 17 percent of the region's gross output (BLS 1996). The direct effects of a $100,000 investment in this sector on employment (2.41 jobs) and personal income ($39,999) and total effects (3.25 jobs and $57,647) are larger than any other sector in the region. However, the multiplier effects of employment and personal income, are not as large as several other sectors in this region. Investments in manufacturing, transportation and utilities, finance, insurance, & real estate, construction and agriculture are more likely to have a greater economic impact. This is because the largest portion of the health sector expenditures, employee wages, are usually low paying service jobs. Investments in the health sector result in more people able to be employed throughout the region, but smaller indirect effects on personal income and new jobs created in other industries in the region relative to the investment.

These findings have implications to both consumers and citizens of rural communities. When consumers make out-of-region health care purchases, those dollars are lost to their community. Consumers travel outside of their community for health care for a number of reasons. The kind of care they need may not be available. Or care may be available but not at the quality or price they are willing or able to pay. Patient consumer preferences-high quality care at affordable prices-may be at odds with the citizen preferences of their rural region. Citizens are concerned about the tax base of their community, the provision of goods and services for the regional population, and the general economic climate to support the quality of life they prefer.

To stop a downward economic spiral in the health sector caused by the loss of access to and quality health services (consumers not willing to use poor quality services and spending outside the community), citizens must find ways to work together with their providers and community organizations to improve both access and quality issues. In a large urban area, the consumer can take their business to another firm in the region and the dollars still stay in the economy. In a small regional economy with a limited range and variety of health care firms, consumer choice to switch to another health care firm is limited. Choice is only available when the consumer travels out of the region. This means that consumer-citizens must actively engage in giving consumer feedback and pressure to improve rural health care services and commit to assisting those organizations in successfully responding before resorting to firms outside their region. If rural citizens want to retain health care services in their area they must take intermediate consumer complaint steps to push their local health firms to look for value added services and improved quality. In this context, the doctor subsector has the best potential to multiply employment and other medical and health related services has the greatest potential to increase personal incomes recirculated in the economy.

Leaders who are active in community economic development must consider that more low wage health jobs may not be the only answer to their economic vitality. Once the basic health infrastructure is in place, rural community leaders may find that other industry sectors offer greater potential to improve the economic climate of their region.

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Endnotes

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[4] As an illustration, this multiplier means that for every increase in the final demand for health care services sufficient to support one new health care sector job directly, an additional 0.35 jobs will be created throughout the entire regional economy as that initial final demand purchase is spent and respent.

Social and Economic Indicators for Montana Counties

While economic growth has been a positive factor in the U.S. economy, concern exists about the quality of life across the population. This paper examines social and economic well-being in the 56 counties of Montana. Results show that four indices are important in measuring well-being. Counties varied in their scores on the four indices. These results show that well-being is a multi-faceted concept and is not consistently good or poor in any given county.

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Introduction

The current political debate over welfare reform has once again piqued interest in examining issues related to economic well-being and quality of life. Many citizens on both sides of the political fence fear that welfare reform will produce a further spread between the very rich and the poor, with a commensurate reduction in the overall quality of life especially for the working poor. Concern about measuring quality of life in the United States is over 50 years old, beginning with the President Hoover's Committee on Social Trends in the 1930s. Since that time, defining what constitutes quality of life has been an ongoing research issue in many disciplines including economics, sociology, psychology, political science, and geography.

Helbum (1982) categorized the many definitions of quality of life into two types. The first definition is subjective and includes perceiving, feeling, or judging the quality of life from a personal framework. The second meaning is objective and measurable with quantifiable attributes that one could observe. The term, "social indicators," are those objective measures that capture various attributes associated with well-being or quality of life and are used in this paper.

Quality of life includes economic well-being as an underlying requirements for achieving many other areas of well-being such as health and education. Distribution of income is one empirical measure of economic well-being. Economists have long realized that general economic growth is not necessarily shared evenly across the population or across geography (Hibbs & Dennis, 1988; Tickamyer & Duncan, 1984). The increasing trend in the United States towards greater income inequality is a concern because of the societal issues associated with the distance between the "haves" and the "have-nots." In addition to income disparity, other social measures are important to quality of life as well. Infant mortality rates, teen-age pregnancy, prevalence of crime, environmental quality and other indicators provide a more holistic idea of quality of life than income alone.

Measurement of social and economic well-being at the macro level is useful for examining general well-being but may not spotlight the populations or geographic locations in which well-being is particularly high or low. The variation in well-being can be wide, even within a small geographic area. The purpose of this paper is to examine socioeconomic indicators of quality of life by county in order to gain a micro-level view in one state, the state of Montana, of how well-being varies by county. The objective of the paper is examine the variations in social indicators for each Montana county as a first step in creating a methodology for tracking social and economic well-being in a longitudinal manner.

Review of Literature

Social indicators have been devised and used in many disciplines including economics, sociology, psychology, political science and environmental sciences. Measures vary according to the values various disciplines place on the concept being measured.

One measure currently being calculated is the Index of Social Health for the United States by the Fordham Institute for Innovation in Social Policy (Miringoff & Miringoff, 1995). This measure combined sixteen separate social indicators into one index. These social indicators include measures such as health insurance coverage for the adult population age 65 and under, food stamp coverage, out-of-pocket health cost for those over 65, school performance, and other measures of social well-being. In tracking the Index from 1973 to 1995, a pattern of decline in social health has been discovered. The Index was at a high of 77.5 in 1973 and fell to 40.6 in 1993, with a consistent pattern of decline in the 20-year time period. This occurred during the time period when the gross domestic product was growing at a healthy rate each year. The disparity between economic growth and the reduction in social well-being indicated by the Index shows that economic well-being and social well-being do not necessarily move in tandem (Miringhoff & Miringhoff, 1996).

One of the first studies of social well-being in counties was reported by Ross, Bluestone, and Hines (1979). This study examined indicators of social well-being for counties in the U.S. using factor analysis. The study found four important social indicators: socioeconomic status; health status; family status; and, alienation.

Abdel-Ghany, Gibbs, and Sharpe (1991) studied quality of life indicators for Alabama counties. They used factor analysis to identify patterns of relationships among 14 indicators of quality of life. They found that four indicators accounted for 77.6% of the total variance among the 14 original indicators. The four indicators were socioeconomic level, crime level, health status, and political participation. None of the counties studied were consistently in the highest or lowest quintile for the four indicators except for one county, which placed in the lowest quintile for all four indicators. In a similar study of Georgia counties (Abdel-Ghany, Bachtel & Sweaney, 1997), four composite indicators also showed no clear pattern of the dimensions of quality of life among the counties. Abdel-Ghany and Tymes (1997) further studied quality of life indicators in Alabama and found four composite measures of quality of life: Socioeconomic status, crime levels, schooling, and health. Results from these three studies show that county variation is wide and no one social or economic policy can be used to improve social well-being for all counties. No previous studies of well-being have been done for counties in Montana.

Methods

Data

The sources of data for this study include the 1990 United States Census of Population (U.S. Bureau of the Census, 1994) and the Montana Kids Count 1996 Data Book. These data were available by county. While some states may have county divisions that do not reflect current cultural and economic units, Montana is a rural state where counties serve as both geographic boundaries as well as social and political entities. The county seat in the majority of Montana counties is the place where the largest high school in the county is located. Governmental business is conducted at the county seat and it is usually the largest trade center in the county. So, in rural Montana, the county remains as a useful unit of analysis for economic, social and political reasons.

An initial pool of 16 indicators reflecting conditions pertaining to quality of life in the 56 Montana counties were selected. The 16 indicators were chosen because they had been found to be significant in other studies and were available for each county in the state. Due to inconsistencies in the loading of some indicators on basic dimensions of factor analysis, the following set of nine indicators were selected:

Percent of college graduates = Percent of population 25 years and older with college or professional degree
Per capita income = Yearly per capita income in dollars
Teenage pregnancy rate = $\frac{\text{Total teen pregnancy}}{\text{Total females (10-19)}} \times 1{,}000$
Infant mortality = $\frac{\text{Death of less than one year of age}}{\text{Total live births}} \times 1{,}000$
Percent of persons above poverty line = Percent of persons who were not poor
Employment rate
Female labor force participation rate
Dependency ratio = Percent of persons under the age of 18 and above the age of 65 to total population
Housing with plumbing = Percent of houses that have plumbing

Statistical analysis

Principal component factor analysis was used to analyze the data. This procedure weights the indicators by the variances in the individual indicators. It allows the transformation of the original data set into a new data set where the indicators are pairwise uncorrelated and where the first principal component will have the maximum variance with those uncorrelated with the first principal component, etc. Since there are 56 counties in the sample and nine indicators, the data matrix is an 159 x 14 matrix

$$X = |x_{ij}| \qquad i = 1,\ldots,56 \qquad j = 1,\ldots,9$$

This X matrix is transformed into a new matrix Z, where Z is the principal component matrix of X. The eigenvalues of the principal components represent the variance in the Z matrix. Construction of composite indexes from the selected nine indicators involved three steps: (1) factor analysis using the varimax method of axis rotation was used to identify underlying patterns of relationships among the nine indicators of quality of life. A criterion of 0.60 was established as the minimal loading necessary for the including the indicators into composite measures, (2) derivation of numerical scores from each subset of variables to provide single index scores of each composite for each county, and (3) standardizing the index scores to a common scale having a mean value of 100 and the same variation among counties.[3]

Results and Discussion

The means and standard deviation of the nine indicators used in the analysis are listed in Table 1. Four composite measures were identified as a result of factor analysis: Socioeconomic status 1, socioeconomic status 2, housing status, and infant mortality as presented in Table 2. Each factor of quality of life was defined by a subset of indicators with factor loading greater than 0.60. These factor loadings are underscored in Table 2. The four factors accounted for 86.5% of the total variance among the nine indicators.

Socioeconomic status I (Factor I) was comprised of percent of college graduates, per capita income, female labor force participation, and dependency ratio. This factor explained 34.7% of the variability among the nine selected indicators of quality of life. Socioeconomic status 2 (Factor II) explained 21.6% of the variability among the nine indicators of quality of life. This factor was defined by teenage pregnancy rate, percent of persons above poverty line, and employment rate. It is interesting to note the positive relationship of employment rate and the rate of those above the poverty line. Also note the negative relationship of the two indicators with teenage pregnancy. Housing status (Factor III) was specified by the percentage of houses with plumbing facilities. It explained 18.8% of the variability among the selected nine indicators of quality of life. Infant mortality (Factor IV) was specified by infant mortality rate. It explained 11.4% of the variability among the nine selected indicators.

Index scores were derived for each county so that high levels of socioeconomic status, housing status, and infant mortality were represented by high scores. The statistical procedures to derive the indexes are described in notes 1 and 2. The indexes were then used to examine patterns of quality of life among Montana counties. A list of the scores for each of the counties is available upon request from the authors.

Table 1

Mean and standard deviation of social indicators for Montana counties

Indicator	**Mean or %**	**Standard Deviation**
Percent of college graduates	15.90	4.55
Per capita income	10312.46	1295.96
Teenage pregnancy rate	8.50	5.64
Infant mortality rate	8.96	18.37
Percent of persons above poverty line	86.23	5.00
Employment rate	93.93	4.06
Female labor force participation rate	52.33	5.16
Dependency ratio	43.65	3.18
Housing with plumbing	96.89	2.12

Table 2
Factor analysis of nine indicators for Montana counties

Indicator	Factor I Socioeconomic Status I	Factor II Socioeconomic Status II	Factor III Housing Status	Factor IV Infant Mortality
Percent of college graduates	81501[1]	13509	23751	- 11218
Per capita income	61892	56564	29369	- 20428
Teenage pregnancy	- 01340	- 85356	16771	- 15507
Infant mortality	- 07030	04621	06222	96656
Percent of persons above poverty line	16336	66679	56997	- 21627
Employment rate	- 00128	91684	- 10190	- 00872
Female labor force participation	- 78584	- 06527	- 23190	12120
Dependency ratio	- 88599	- 00777	- 07594	09737
Housing with plumbing	03550	- 19788	88721	11508
unrotated solution				
Eigenvalue	3.12	1.94	1.24	1.03
Percent of variance explained	34.7	21.6	18.8	11.4

[1] Underscored loadings greater than 0.6 designate factors included in index for each factor. Loadings are the pattern matrix from a varimax rotation.

Socioeconomic Status I

The geographic patterns associated with Socioeconomic Status 1 found that he counties of Gallatin, Missoula, Lewis & Clark, Jefferson, Yellowstone, Cascade, Flathead, Beaverhead, Powder River, and Park had the highest index values for socioeconomic status 1. Prairie, Wibaux, Sheridan, Wheatland, Musselshell, Liberty, Big Horn, Roosevelt, Deer Lodge, and Daniels had the lowest index values.

Socioeconomic Status 2

The geographic patterns of Socioeconomic Status 2 found that high socioeconomic status was prevalent among the counties of Judith Basin, Prairie, Fallon, Garfield, Daniels, Toole, Stillwater, Jefferson, Liberty, and Golden Valley. Low socioeconomic status on the other hand was prevalent among the counties of Glacier, Big Horn, Roosevelt, Blaine, Lincoln, Deer Lodge, Rosebud, Sanders, Lake, and Silver Bow.

Housing Status

The geographic patterns of housing status identified counties with the lowest percentage of houses with plumbing facilities were Wibaux, Yellowstone, Roosevelt, Silver Bow, Gallatin, Dawson, Fallon, Lewis & Clark, and Sheridan. Counties with the highest percentage of houses without plumbing facilities include Petroleum, Phillips, Mineral, Powder River, Granite, Carter, Meagher, Broadwater, Beaverhead, and Liberty.

Infant Mortality

Counties with the highest infant mortality rate include Wibaux, Garfield, Golden Valley, Granite, Broadwater, Lincoln, Hill, Custer, Silver Bow, and Stillwater. Counties with lowest infant mortality rates include Blaine, Choteau, Dawson, Daniels, Carter, Yellowstone, Madison, Deer Lodge, and Judith Basin. Many other counties also had low infant mortality rates.

Conclusion and Discussion

This study used 16 social indicators measured for each of the 56 counties in the state of Montana. Factor analysis determined that nine of the indicators contained 86.5% of the total variability. These nine indicators were used to construct four composite indexes: two indices of socioeconomic status, one housing index and one index measuring infant mortality. The counties with high levels of well-being were indicated as well as those at the bottom of the various indices of well-being.

An important limitation of the Housing Status Index and the Infant Mortality Index is that the number of houses with plumbing and infant mortality are relatively rare occurrences. The counties having high values on the Indices on housing and infant mortality are those with very small populations. Therefore, even one house without plumbing or one infant death will skew the mean since so few observations are present.

As was found with previous studies of social well-being in counties in Alabama and Georgia, no county was found to be consistently at the top or consistently at the bottom of all four of the indices. This would indicate that well-being is a multi-faceted concept. This is an important finding. Clearly, trying to use even as many as 16 indicators of social and economic well-being does not result in finding obvious county patterns in the state. Well-being is a multi-faceted concept and any single indicator or set of indicators communicates only one aspect of well-being.

Many ideas for further research can be gleaned from this study. The first notion is that many more measures of economic and social well-being are available from various data sources within a given state at the county level. The measures used here were ones that were used in previous studies, but the choice of measures need not be confined to these particular ones. State agencies collect a great deal of data that is never used by any other agency. By working collaboratively with agencies and offices that do collect data, many other interesting measures could be gathered.

A second line of research would be to examine predictors of the various measures of quality of life. When viewing the results of social and economic indicators for Montana counties, one could hypothesize about possible predictors. The first is that many of the counties ending up at the bottom of the social well-being indices are those counties where Indian reservations are located, although this is not always the case. Secondly, it appears that rural counties end up at the bottom of the indices more often than more urban counties. Perhaps one of the explanatory variables would be that urban counties offer more employment opportunities to more members of the family and therefore offer more income earning potential. Higher incomes would boost socioeconomic measures of well-being. A final measure that would appear to be important in examining the Montana data is the type of industry located in a county. Some of the counties at the lower end of the well-being indices are those with dry-land agriculture as a primary industry in the county. It may be that dry-land farming or cattle ranching is less stable or provide less income than other agricultural operations such as irrigated farming or feedlot cattle operations. Or perhaps agriculture in general predicts lower well-being than having a more diversified urban economic base or an extractive industry base such as timbering or mining. These predictors have been shown to be important in other studies and a non-statistical examination of the results of the Montana data show that the variables mentioned above should be examined in a linear or non-linear statistical model. From merely looking at the data and the results of the factor analysis, patterns cannot be clearly detected. However, further statistical models could test hypotheses about the characteristics of the counties and determine if a pattern is present.

Changes in public policy and changes in the world, national, regional and local economies prompt concern about well-being across a population. Repeated analyses such as the one conducted for Montana counties could become important longitudinal research efforts to document how social well-being is changing at the county level. The information could be used to design and implement social policy that can be effective in addressing the social needs of states at a micro-level rather than treating each state as a homogeneous entity.

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Endnotes

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The standardized values of the set of indicators were combined to derive factor scores. Values for each county were expressed as Z scores $(X_{ik} - {}_{k})$ S_k where X_{ik} is the value of indicator K for county i (factor loading), ${}_{k}$ is the mean value and S_k is the standard deviation of indicator K for 56 counties. The equation used to construct factor scores for each index may be expressed as:

$$I_{ij} = \sum_k Z_{ik} \qquad (1)$$

where I_{ij} = index for county i,
Z_{ik} = Z score for indicator K in county i, and
K = indicators included in the jth index.

The composite indexes derived from equation (1) results in four scales with many negative values and different standard deviations. For ease of interpretation, the factor scores derived in equation (1) were standardized and converted to a common scale through transformation to t - scores distributions with mean equal 100 and standard deviation equal 20 (Ross, Bluestone, and Hines, 1979). The indexes were transformed to t - scores as follows:

$$T_{ij} = 100 + 20\, I'_{ij} \qquad (2)$$

where $I'_{ij} = \dfrac{I_{ij} - {}_{j}}{S_j}$
and T_{ij} = t-score index j for county i,
I_{ij} = index for county i,
${}_{j}$ = mean value of index j, and
S_j = standard deviation of index j.

Deciding to Initiate a Consumer Boycott: Questions of Right or Wrong

Although consumers have participated in hundreds of boycotts in the last decade little scholarly attention has been directed at the ethics of these often-controversial actions. In this paper ethical dilemmas are examined relating to the decision to start a consumer boycott. Also considered is the consumer buycott, an organizational alternative some observers believe is more free of ethical problems than the consumer boycott.

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Initiating Consumer Boycotts: Questions of Ends and Means

For many observers a most salient ethical issue relating to boycotts concerns the act of starting (rather than stopping) a consumer boycott. For these observers the key question is whether the ends sought by a proposed boycott initiative justify the means to be used to attain them. In their efforts to deal with this question some analysts have focused on boycott "ends" while others have concentrated on boycott "means." Let us look at these two positions in turn.

Boycott Ends

To illustrate this position, Neier (1982) has proposed a simple preference model based on the nature of the offensive behavior which the boycott seeks to end. He is most sympathetic to "boycotts against practices that are deemed objectionable," such as the exploitation of farmworkers. He is least sympathetic to "black list" type boycotts; these are actions which attempt to punish individuals or groups (often performing artists) simply because they hold points of view which are offensive to the boycotters.

Boycott Means

To illustrate this position, Garrett (1986) has contributed to the discussion of boycott ethics by identifying three parties which could be injured by injudicious use of the boycott strategy. One, of course, is the corporate target, and the ethical questions loom large if it finds itself falsely accused, or if it finds that it is incapable of responding to the boycotters' demands. A second group identified by Garrett consists of the customers of the boycotted firm, who, he believes, should not be forced by intimidating tactics to honor the boycott against their will. Finally, Garrett's third group consists of secondary parties (typically non-principals in the boycott struggle who find themselves caught in the cross-fire, such as workers, suppliers and distributors) whose economic fortunes could well be affected by the boycott and its outcome.

We look next at three types of boycotts with the potential to harm such groups.

1. Obstructionist Boycotts. Boycotts of this type raise ethical issues since they place obstacles in the way of consumers who are attempting to purchase a boycotted product or service. Perhaps the best known variety of an obstructionist boycott is the sit-in, a technique used by African-Americans at segregated lunch counters in Southern communities in the 1950s and 1960s.
2. Secondary Boycotts. This boycott type focuses on an economic entity, usually a retailer, who buys the wares of the primary boycott target for the purpose of reselling them to consumers. Since the targeted retailer may sell many thousands of products, it seems highly questionable ethically to threaten its economic viability and the livelihood of its workers simply because it carries a few products sold by the offending primary boycott target. And this point has been recognized in the law which has often banned secondary boycotts but allowed picketers to inform the customers of a retail store that it is selling certain goods which are the focus of a primary consumer boycott.
3. Surrogate Boycotts. Ethical issues relating to boycotts are especially important in light of the growing popularity of "surrogate boycotts." With these indirect political actions, a protest group finds itself dissatisfied with the public policies of a city, state, or foreign nation and acts upon its feelings by boycotting surrogates (the business firms operating in the affected geographic area). Needless to say, there are many non-principals in such boycott struggles who may be adversely affected by their outcomes.

Concluding Comments and a Proposal

As we have seen, even ordinary garden-variety consumer boycotts have the potential to harm many innocent parties including rank-and-file workers and the various economic entities that depend upon the boycotted firms that employ these workers. And, of course, certain variations on the boycott theme can damage even more neutral parties as became evident in the discussion of obstructionist boycotts, secondary boycotts and surrogate boycotts.

To end these remarks on an encouraging note we look at another distinction between boycott actions, that between a "positive" boycott and a "negative" boycott. The positive boycott takes the form of a "black list" of items not to buy in the marketplace. In this sense it is synonymous with a consumer boycott. The negative boycott is a positive boycott with a twist in that the focus is on what to buy rather than what not to buy. For this reason it often takes the form of a "white list" of items to purchase, and is sometimes referred to as a "buycott." Perhaps the most common example of the buycott is the effort on the part of organized labor to encourage consumers to buy products with a union label.

What some observers find attractive about buycotts is that unlike boycotts, with their focus on threatening or punitive measures, buycotts simply encourage consumers to reward firms that have demonstrated behavior that is deserving of support in the view of the buycott organizers. And while this may be more easily said than done, the buycott, in theory at least, has much to commend it, both ethically and instrumentally, as a social change initiative.

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What's in a Name?: The Scottish Business Community's Perceptions of the Functions Conveyed by the Title of a Consumer Protection Regulators

The Trading Standards Departments (TSD's) within Scotland are the local government enforcement service for consumer protection and serve three client groups - the business community, individual consumers and the public sector. The aim of this paper is to examine the functions which both members of the business community and trading standards officers (TSO's) perceive are conveyed by the respective name of a department. The results are presented in conjunction with theories of communication and perception.

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Introduction/Background

Consumer protection regulations were established throughout the world to protect both the honest trader and the individual member of the consuming public. In Britain, formalised regulations can be traced back to the Magna Carta of 1215BC (Borrie & Diamond, 1981). One local government unit in Britain is invested with the powers of enforcement, namely the Trading Standards Departments (TSD's). The Trading Standards Service (TSS) has three distinct although inter-related client groups - the business community, the public sector and the individual consumer - with the enforcement provision supplemented by a non-statutory advice service. The British business community is subject to an array of both domestic and European Union statutory tools, with those relevant to consumer protection enforced on the whole by the TSD's. The majority of actual prosecutions dealt with by the TSD's in Scotland are with regard to the provisions of four Acts, namely the Trade Descriptions Act 1968, the Weights and Measures Act 1985, the Consumer Protection Act 1987 (CPA) and the Consumer Credit Act 1974 (Crown Office, 1993). The modern departments undertake mostly "preventative' activities" (Harvey & Parry, 1992, pg30), ranging from supplying access to pre-purchase information for individual consumers, to agreeing advertising copy for traders prior to publication.

During the 1960's, the existing 19th Century legislation covering weights and measures was up-dated by the Weights and Measures Act 1963. The provisions of this Act were enforced by the local government Weights and Measures Inspectorate, whose remit gradually broadened with the introduction throughout Britain of both domestic and European consumer protection legislation during the late-1960's and 1970's. Recognition of the mobility of trade and also the dynamic nature of the consumer marketplace, led to the changing of department names in order to convey more effectively their expanding roles. Therefore, a new title was adopted by most Trading Standards Departments within Britain, or in the minority of cases, the Consumer Protection Department. The decision regarding the exact title of each individual department is made by the respective local government council. The main powers of enforcement and investigation contained within both the Trade Descriptions Act 1968 and the earlier Weights and Measures Act 1963, have firmly established the responsibility for consumer protection legislation with local government units throughout Britain. However, although the legislation covering the consuming public in Britain is mostly uniform, differences exist with respect to the range of powers and duties of the TSD's. The Scottish system separates the powers of the Environmental Health Departments and the TSD's, with the latter retaining jurisdiction over food composition and labelling regulations. Conversely, within England and Wales these powers are under the remit of the TSD's.

The TSS can be viewed as a service which effects everyone, either directly or indirectly (Galland, 1995) as a consequence of the unique place the TSD's hold within the public sector providing an unbiased approach to enforcement and ensuring a level playing field in the marketplace. Increased consumer confidence, defined as both individuals and traders, should evolve from the successes of the preventative workings of the individual TSD's, especially with regard to education (Coulter, 1998). Recognising the different needs of Society, the professional body for TSO's, the Institute of Trading Standards Administration (ITSA) defines the role of TSD's as follows:

> *"to advise, educate, inform and protect consumers, support, assist and influence the business community, and expose, challenge and where necessary prosecute those who flout the law and put consumers and honest traders at risk"* (Galland, 1995, pg.2)

However, for the TSS to successfully achieve these goals, the client groups must be aware of its existence and also have a perception of the functions of the departments. Otherwise, the service will not be utilised to its maximum extent. Furthermore, if there is a perception amongst the business community that the TSS has a primary goal of protecting the individual consumer, traders may pursue what they perceive to be less biased advice and information from other sources, for example, trade associations. Therefore, effective communication is not only fundamental to the process of implementing legislation (Morris, 1980), but also to the continued utilisation of the enforcement and advice agencies which are integral parts of the regulatory framework.

Communication Channels and Perception

Every individual holds very personal attitudes regarding a range of subjects, all of which influence behaviour and perceptions (Drucker, 1980). These attitudes are personal beliefs which may be based on a range of factors including past first-hand experience with, for example, a range of enforcement agencies for a trader and information conveyed from other traders (Coulter, 1998). "Perception is not logic [but] experience" (Drucker, 1980, pg.392), therefore, for two people to communicate effectively with each other, or for a meaning to be conveyed through the medium of a department name, the initiator must utilise terms which are 'experience based', that is, in the language of the target audience (Coulter, 1998, pg.100). There are many forces within the business environment which can affect the traders' perceptions. Barriers to this effective transference of information includes the problem of 'selective perception'. This is based on the receiver's needs, motivations, experience, background and personal characteristics (Robbins, 1993, pg.339). Therefore, the name of a regulatory department, if it is to effectively convey the functions of that agency, must utilise terms which are known to the target user group, and also attempt to minimise

Routine visits of TSO's to business premises are the most common interaction between the business community and TSD's. The visits, which constitutes the majority of a TSO's time with regard to enforcement activities, can be used to convey information regarding new and existing legislation, and also to allow the trader to clarify any aspect of the regulatory framework with which they are unclear (Coulter, 1998). However, the visit is not always welcomed by the trader, with the possibility of an unsatisfactory prior meeting between the parties souring the relationship in the future. Therefore, this relationship requires a degree of trust and mutual respect between the parties as communication channels are very prone to disruptions. These include lack of trust, perceptions of either the person sending the information or the person receiving it, the language utilised and the experiences of those with officers of the agency (Davis & Newstrom, 1989). In recent years, some sectors of the business community have deemed routine visits and inspections as disruptive with the TSO's accused of being, "overzealous, erratic and bullying" (NCC, 1994, pg.21). Although the TSD's vigorously denied this allegation, the debate took place within the public arena and therefore, may colour the perception of business people towards the TSD's in the future. Therefore, the TSD's have three client groups with whom they work, each of which will hold perceptions about the functions of the TSD, some of which will be conveyed by the name, whilst others will be attributable to past experiences. As personal contact between the TSD and the business community is limited due to staffing resources, the name chosen should convey the actual functions of the department, allowing the client to decide which services they can gain

Methods

The aim of the study was to examine the attitudes and perceptions of both service users and providers of a local government enforcement agency, towards the department's functions which are conveyed by the particular wording of the title. The objectives of the study can be stated thus:

* to identify the attitudes and perceptions of members of the business community towards the functions conveyed by the name of a consumer protection enforcement agency;

* to identify the attitudes and perceptions of trading standards officers towards the functions conveyed by the name of a consumer protection enforcement agency, and

* ascertain if there is an association between the perception of traders towards the name of a TSD and the perceptions of TSO's.

For the sake of this study, a 'trader' who may be a manufacturer or a retailer, is defined as anyone selling goods or services in the course of business. It may be a limited company, local authority, public corporation, partnership or individual (National Federation of Consumer Councils, 1982, pg.9).

Trading Standards Department & Officer Sample

The consumer protection law which is enforced throughout Britain is not entirely uniform due to historically different legal systems. For example, in England and Wales, the trading standards departments enforce various regulatory tools pertinent to food whereas is Scotland this function is under the remit of a separate Environmental Health Department. Due to the small number of TSO's employed by local government, the first study utilised a census sample of the 32 Scottish mainland trading standards departments, which between them, employ 151 full-time TSO's. The sampling frame was comprised of staffing lists provided by each regional department.

Trader's Sample

The Trader's sample of 501 units was randomly drawn from trade directories which covered all business premises by postcode/zipcode, did not contain multiple entries and contained listings in alphabetical order. Every business postcode holder in Scotland is entitled to one entry within the directory, therefore eliminating the bias originating from selective entry of commercial directories like the Yellow Pages and the White Pages. Local branches of companies and not the head offices were targeted, as it is the branch manager and their staff who work on a daily basis within the limits of the consumer protection legislation, and therefore, also deal with TSO's. This level of targeting allowed the level of awareness of TSD's within the local community to be assessed, and also the amount of previous contact between the manager and the TSD. This therefore offered an insight into the extent to which perceptions were experience based. As all sectors of the business community are subject to the consumer protection laws enforced by the TSD's, selection criteria based on the business activity of the sampling unit was not necessary.

Postal Questionnaires

Postal questionnaires were utilised as the most effective tool to cover mainland Scotland (Chisnall, 1994), with personalised covering letters attached to attempt to reduce the questionnaire being discarded as 'junk mail' (Cragg, 1991). A mixture of open and closed (including ranked scales) questions were used, in order to allow investigation of both attitudes and perceptions towards the TSD's functions conveyed by the department's name (Easterby-Smith, et al, 1991). The questionnaires sent to each sample were identical to allow comparability of results, except for two extra questions directed at Traders, namely, how much contact they had had with the TSD's in the past, and the reason for that contact. This would allow qualification of their perceptions of the functions conveyed by the department's name.

Results

The sample of 501 traders throughout mainland Scotland, resulted in a mixture of establishments from the manufacturing, retailing and service sectors. The total of 172 responses comprised of the following categories: 130 retailers; 40 service sector, and 2 manufacturing companies. Therefore, the overall response rate for the Traders sample after two follow-ups, was 39.9%. The second study targeted a census sample of the 151 full-time TSO's within the 9 regional mainland Scotland TSD's. The response rate was 59.6% after two follow-up reminders, one by letter and the other by telephone.

A majority of 58.3% of traders had never received a visit to their premises by a TSO, with almost a fifth being contacted in this manner once in the past 12 months. The smallest category (3%) were those who had received over 6 visits. furthermore, three quarters of the traders sampled had never contacted a TSD in their capacity as member of the business community. Traders believed that the name, '*Consumer Protection & Trading Standards Department*' best conveyed the workings of the service. The second most frequently cited name concentrated on the business functions, '*Trading Standards Department*', with less than one sixth of respondents opting for the consumer base title of, '*Consumer Protection Department*'.

Table no. 1

Which Name Which Best Conveys the Department's Functions?

Department Name	**Traders**		**TSO's**	
	f	%	*f*	%
Trading Standards Department	55	35	***59***	***65.5***
Weights & Measures Department	10	6.4	-	-
Consumer Protection Department	18	11.5	-	-
Consumer Protection & Trading Standards Department	***70***	***44.6***	23	25.6
Other	4	2.5	8	8.9
TOTAL	**157***	**100%**	**90**	**100%**

Note: *15 missing answers. Traders: SD=1.398; TSO's: SD=1.578; *f* = frequency

Utilising a two-tailed t-test, **Table no. 2** below, illustrates that there was found to be a negative and statistical difference between the chosen name for the department and Trader's membership of industrial sector. This result suggest that the industrial sector within which a Trader operates, has an effect on their perception regarding the functions of the TSD. There was also found to be a negative and statistical correlation between the geographical region within which the TSO works, and the name chosen by officers.

Table no. 2

Correlation of Department Name & Respondents' Geographical Region/Sector

Variable	***Correlation***	***2-tailed Sig.***	***D.F.***
Traders Sample:			
1. Department Name	-.005	***.000****	156
2. Sector of Industry			
1. Department Name	.089	***.000****	156
2. Geographical Region of Trader's Business			
TSO's Sample:			
1. Department Name			
2. Geographical Region of TSD	-.027	***.000****	89

Note: *Significant at $p<.05$

An *'agency which works for both the public and traders'* was perceived as the most important function of a TSD by Traders. The least important function, as ranked by Traders was, *'an agency to enable the consuming public to gain redress'* (see **Table no. 3** below). The role of the TSD as *information source specifically for traders* was perceived as marginally more important than *for the public*.

Table no. 3

Traders' & TSOs' Rankings of the Functions of TSD's

	Traders		**TSO's**	
Functions of Trading Standards Department	**Sum of Ranks* (n)**	**SD**	**Sum of Ranks* (n)**	**SD**
Source of information for the public	387 (133)	1.37	280 (88)	1.04
Agency to enable public to gain redress	430 (131)	1.33	350 (88)	1.14
Agency which enforces consumer protection law	401 (133)	1.37	207 (89)	1.19
Source of legal information to traders	375 (136)	1.39	317 (88)	1.10
Agency for both the public and traders	***279 (144)***	***1.36***	***137 (90)***	***0.99***

Note: *Max = 860; Min = 172 where 1= Most important & 5= Least important. 4 D.F.

A Kendall Co-efficient of Concordance illustrated the lack of statistical agreement amongst the respondents ($W = 0.1229$; $r = .0000$; $p<.01$; 4 D.F.). Utilising a Friedman test, it was found that the relative rankings *are significant* ($F = .0000$; $p< .10$; 4 D.F.). Therefore, although the respondents are not in overall agreement regarding the relative importance of the functions to a significant degree, an important finding is that Traders' perception of the department as an agency which works for both the trading community and the consuming public, is *statistically significant*.

"*An agency which works for both the public and traders*" was also ranked the most important function by TSOs, with, "*An agency to gain redress for the public*" the least important function. A *statistical agreement* did exist amongst the rankings by TSOs' ($W = 0.4235$; $r = .0000$; 5 D.F.) with the relative rankings of the functions also found

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to be *statistically significant* ($F = .0000$; $p<.10$; 5 D.F.). Therefore, in contrast to the random nature of the trader's rankings, TSO's are *statistically agreed* with regard to the relative importance of the functions of the departments.

Discussion: Perceptions of the Department's Name

The names of individual TSD's have changed in recent years, with the initial *Weights and Measures Inspectorates* of the 1960's and early 1970's gradually replaced by the more encompassing title of TSD. This new title reflected the broader terms of legislation and regulations enforceable by TSO's. Latterly, many TSD's have changed title again, becoming known as *Consumer Protection and Trading Standards Departments*, explicitly emphasising the dual nature of their role within the modern trading environment. The titles utilised by the Scottish TSD's which comprised the census sample were as follows: *'Consumer Protection and Trading Standards Department'*; *'Trading Standards and Consumer Protection Department*, *'Trading Standards Department'*.

When invited to choose a title which they perceive as best specifying the workings of a *Trading Standards Department*, the respective choice of a TSO may be based on their experiences of working for the Department which currently employs them. Conversely, the respective perception of a Trader may be accounted for by any previous experience with a TSD and/or a TSO (Robbins, 1993). It may also be an indication of the Traders' level of understanding regarding the workings of the modern TSD, whether or not this is based on *personal experience*. Furthermore, the Traders' choice was also considered to be an indication of their perception of the relative importance which the TSD's themselves place on each of their three client groups - that is the business community, the consuming public and the public sector.

The name most frequently chosen by Traders to specify the functions of the regulatory department was: *'Consumer Protection & Trading Standards Department'*. This result taken in isolation, demonstrates that Traders defined the Department's functions in terms which covered the two most publicly prominent client groups of the TSS, namely the consuming public and business community. One Trader elaborated this viewpoint, demonstrating that *first hand experience* of the TSD is not a prerequisite to the perception that the importance of the meaning conveyed by its title, stating: *"[I do not] know what they do! But the name should reflect the actual activities. Industrial references"*.

If the business community's view that the name of the regulator is an indication of its functions is accepted, it is therefore foreseeable that, due to the mobility of trade, and the diversity of economic environments which exist across Scotland, the beliefs of TSO's would not be homogeneous. Although the majority of TSO's who responded chose the name: *'Trading Standards Department'*, this result did not reflect the results from a separate rating scale question regarding who was the perceived most important client of the TSD. Opinion on this issue was split with the majority of TSO's (58%) disagreeing that the individual consumer was the most important client and, less than 10% of respondents rating the trader as the most important client of the TSS.

No statistical association was found between the name chosen to signify the functions of the Department by TSO's and that chosen by Traders (see **Figure no. 1** below). There exists, therefore, a disparity between the service provider (TSO's) and the end-user (Traders), with regard to the name which best conveys the functions of the TSD. As, "perception is not logic [but] experience" (Drucker, 1980, pg.392), this situation, could have implications for utilisation of the TSS by traders and also their perception of actual service provision. Furthermore, did exist a *statistical correlation* between the particular industrial sector within which the Trader operates, and their perception of the functions of the TSD's, as specified by its name (see **Table no. 2** above). Furthermore, a *statistical correlation* was found to exist between the respective Region of both samples, and the respective name which they chose for the Department.

The linear diagram in **Figure no. 1** below, illustrates that the Department name is only one element in the equation required to determine how disparate the perceptions of the end-user and provider are regarding perceptions of the functions of a TSD. The diagram collates highest frequency answers from identical questions set to both samples. The results, when displayed together, clearly demonstrate areas in which the samples differ and agree, on particular perceptual issues.

Traders and TSO's both ranked, *"an agency for both the Public & Traders"* as the most important function of a TSD (see **Figure no. 1** below). Furthermore, Traders and TSO's when invited to state *in their own words* what they perceived to be the most important function of a TSD, identified the following, *'[an] agency which works for both the business community and the consuming public to combat unfair trading practices'* (see **Figure no. 1** below). The latter response was in direct contrast to the function ranked *least important* by both samples, that of, *'an agency to enable the public to gain redress with regards to consumer problems'* (see **Figure no. 1** below). However, in contrast to the *statistical agreement* amongst the TSO's rankings, the results of the Traders' rankings were found to be *statistically random* in nature. Therefore, although the two samples do not agree which name best specifies the functions of the Department, both perceived the maintenance of fair trading for the benefit of both consumers and traders, without client bias, as the most important function.

Figure no. 1

Summary of Traders' & TSOs' Initial Perceptions of TSD's

Traders' Perceptions		**Trading Standards Officers' Perceptions**
Name to specify functions:		***Name to specify functions:***
Consumer Protection & Trading Standards Department	**O**	Trading Standards Department
Ranked most important department function		***Ranked most important department function***
Agency for both Public & Traders		Agency for both Public & Traders
Categorised response re. functions		***Categorised response re. functions***
Agency working for both the business community and the consuming public.		Agency working for both the business community and the consuming public

Note: **O** signifies *no significant association* exits between the two samples.

One encompassing phrase was identifiable from categorised qualitative responses given by Traders' to demonstrate the main functions of the TSD:

> *"an agency which works for both the public and the business community, in order to safe guard the quality of goods and services, inform both parties of their rights and obligations, and maintain fair play with regard to consumer rights".*

TSOs' categorised qualitative responses also identified the TSD in similar, although not as specific, terms:

> *"an agency to protect both the consuming public and trading community".*

Therefore, although initially the results appear to indicate that Traders and TSO's define the functions of the TSD's in different terms, further analysis indicates both samples perceive TSD's work as to maintain fair trading for all parties within the marketplace. Furthermore, the random nature of the rankings of the functions of the TSD's by Traders, indicates that their perception may not be primarily based on first hand experience.

Conclusions

In conclusion, this study has demonstrated that although both traders and TSO's identified the functions conveyed by the name of a TSD in different terms, both samples agree on the perceived relative importance of the various functions of the TSD. This result was extended by the fact that the majority of traders did not perceive a bias from the TSD's towards any particular client group. This result demonstrates a level of awareness amongst traders of the existence of the TSD, although the majority had experienced neither a visit to their premises by an officer, nor contacted the TSD themselves. Therefore, although the business community and TSO's utilise differing terms, the communication of functions through the medium of the department name has been effective.

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An Assessment of the Wealth Holdings of Recent Widows

Data from the Survey of Income and Program Participation are used to investigate the amount and composition of wealth held by four different groups: continuously married women, women who would soon be widowed, recent widows, and long-standing widows. The analyses reveal that about-to-be widowed women have fewer assets than intact couples. There is also a further decline in wealth holdings immediately following the husbands' deaths. These findings parallel what we know about income changes that surround the death of a spouse.

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Introduction

It is generally agreed that the incomes of widowed women have lagged behind their married counterparts over the latter half of this century. A recent study found that in the early 1990s, recently widowed women had needs-adjusted incomes that averaged only 68 percent of similarly aged married couples (Holden and Zick, 1997). The decline in needs-adjusted income that is typically experienced by widows is somewhat puzzling in light of the rising labor force participation rates of married women and the expansion of the insurance and pension industries during the latter part of this century. Occasionally, it has been suggested that widows' lower incomes may be partially compensated for by higher wealth holdings. Yet, very little is known about the wealth holdings of widows.

The death of a spouse is an event that may precipitate a large decline in wealth because the surviving spouse may need to liquidate assets to cover health care costs prior to the death and/or burial costs. In addition, if the individual who died willed assets to anyone other than his/her spouse, this too could drain away some wealth. Life insurance policies may partially or fully offset this decline in assets if the insurance beneficiary is the spouse. The magnitude of the decline in wealth that is sparked by the death in the 1990s is not well known.

In this paper, we use data from the 1990, 1991, and 1992 Survey of Income and Program Participation (SIPP) panels to learn more about the amount of wealth held by four different groups: continuously married women, women who would soon be widowed, recent widows, and long-standing widows. These comparisons will provide insights regarding the magnitude of any changes in wealth that occur when a husband dies and the potential for using this wealth to augment the income of newly widowed women who might otherwise risk falling into poverty.

The Literature

Insights about the wealth holdings of widows can be gleaned by reviewing the literature that focuses on comparing the wealth holdings of elderly and non-elderly households since most widows are over the age of 60. Descriptive investigations of asset holdings reveal that there is considerable dispersion of wealth within the elderly population (Hurd, 1990; Smith, 1997a, 1997b). Multivariate analyses suggest that this variation in wealth holdings may be partially attributable to differences in income (Smith, 1997a, 1995; Wolff, 1992), education (Smith, 1997a, 1995), race/ethnicity (Smith, 1997a, 1995), health status (Smith, 1997a, 1995) and marital status (Hurd and Wise, 1989; Smith, 1995).

Investigations that examine the role of widowhood and wealth have been limited to three studies to date. Hurd and Wise (1989) utilize data from the 1969-1979 Retirement History Survey of heads of household who were born between 1905 and 1911, to examine pre- and post-widowhood wealth holdings. Their analyses reveal that the typical woman who moved from being married to widowed between the 1975 and 1977 interviews experienced about a 30 percent decline in household wealth during that two-year period. Yet, they also note evidence of long-standing differences in wealth holdings suggesting that the drop in wealth is not generally attributable to rising medical expenses immediately prior to the death. Nor did they find any evidence that would support the hypothesis that the wealth differences are a function of bequests to children.

Descriptive work by Radner (1993) uses data from respondents age 65 and older in the 1984 Survey of Income and Program Participation (SIPP) to estimate differences in wealth holdings among the oldest old by gender and marital status. He finds that older widowed women, on average, have moderately lower net worth, fewer financial assets, and a larger percentage of their assets tied up in housing than do similarly aged men or similarly aged "other women" (i.e., married women, women living with others).

Finally, Smith (1995) uses data from the 1992 baseline interviews of men and women aged 51 to 61 in the Health and Retirement Survey to assess the correlates of wealth in a multivariate context. In his analysis, he finds that widows continue to have significantly less wealth than their married or divorced counterparts even once one controls for current income, health status, education, employment status, region of residence, financial time horizon, subjective life expectancy, and intentions regarding bequests.

At this point, it is clear that the wealth holdings of widows are typically lower than those of similarly aged married couples. Estimates of the magnitude of the difference, however, appear to vary depending on the data used and the analysis approach. All three of the analyses make use of samples that contain age restrictions that may further affect the results. To gain a better understanding of how the death of a spouse affects the wealth holdings of widows, we will use data on a sample of widows that span a wide age range and compare their wealth holdings to similarly aged married couples.

The Data

The data used in the current analyses come from the 1990, 1991, and 1992 SIPP panels. We elect to use SIPP because it is the only data set that will allow us to examine wealth using a sample of widows who are representative of the larger population of women who are widowed at various ages. In addition, SIPP has the advantage of providing detailed information on the components of wealth. We use all three panels to increase the number of widows that are included in our analyses.

Each SIPP panel is a nationally representative sample of households whose members are interviewed at four-month intervals over a 32-month period. At each interview, data are collected on household composition and the incomes of each household member over the four preceding months. In addition, questions from special topical modules, including household wealth and its composition, are asked in each interview.

Although income data (including income from assets) are gathered for each month, wealth values are asked only once. The wealth module is part of the wave 4 interview in the 1990 and 1992 panels and the wave 7 interview in the 1991 panel. This creates a challenge in terms of identifying newly widowed individuals across the panels relative to when the wealth questions are asked. We deal with this by classifying widows into three groups: (1) women who enter the SIPP panel as widows and who report in the marital history module that their spouse died at some point in the preceding three years (i.e., the Wave 1 widows), (2) women who are married when they enter the SIPP panel but whose husbands die prior to the interviewing wave where the wealth questions are asked (i.e., the recently widowed), and (3) women who are married when they enter the SIPP panel and who are still married when the wealth questions are asked, but who report that their spouse has died at some subsequent interview (i.e., the about-to-be widowed). As a point of comparison in our analyses, we also include a random one-quarter sample of similarly aged women who are married when they enter the SIPP panel and who remain married throughout the 32-month period (i.e., the always married). The only further restriction we place on the respondents in these four groups is that they be age 40 or older at the time that they enter SIPP. With these restrictions in place, the analyses that follow contain 784 wave 1 widows, 293 about-to-be widowed women, 219 recently widowed women, and 3,398 continuously married women.

A second challenge of using SIPP is that the three SIPP panels overlap one another. As a consequence, we cannot apply the specific panel weights. However, because the married couples in our sample are somewhat younger than those who are widowed, we develop a weight for the purposes of this study that is applied to the continuously married women to make their age distribution equal to that of the (older) widowed groups. Thus, any observed differences in wealth are net of differences that might be attributable to age discrepancies across the groups.

A final challenge of using SIPP arises because there is a relatively high percentage of missing data on wealth in SIPP. The high percentage of missing data on wealth questions is not unique to SIPP as respondents in most surveys are either reluctant to answer or do not know the answer to questions about the dollar value of their wealth holdings.

Despite the drawbacks of the wealth measures contained in SIPP, we elect to utilize it in the current analysis for three reasons. First, it is the only panel that can provide information on wealth (and its components) for recent widows of all ages. Second, SIPP does employ a cross-sectional imputation procedure to deal with missing data on total wealth and its components and thus widows who initially had missing wealth data are included in the current analyses. Finally, recent research on the general quality of SIPP wealth data concludes that, despite its limitations, SIPP provides high quality measures of wealth and its components for the overall population and various subgroups (McNeil and Lamas, 1989, Curtin, Juster, and Morgan, 1989).

The Results

Table 1 presents basic socio-demographic information on the women who are included in the current analyses. The distribution across widowhood groups demonstrates the infrequency of events observed during these longitudinal panels. Eleven percent of the sample are women who are married at the first interview and become widowed during the panel. Slightly over half (6.2 percent of the sample) are widowed by the time of the wealth module. These and the seventeen percent of the sample who were widowed within three years prior to the first interview have wealth measured as widows -- but fairly soon after their husbands' deaths. The remaining eventual widows are observed while still married, as, of course, are the always married. For the about-to-be widowed sample, whether we observe their wealth when widowed or married is a happenstance of the timing of the wealth module, which is not related to other characteristics of the women. The typical woman included here is white, over age 60, has a high school education, and is not employed. (Age, presence or absence of children, and employment status are all measured at the time of the asset module.)

Table 1
Weighted Descriptive Statistics

Variable	Percentage
Widowhood Groups	17.1 - Wave 1 Widows
	6.2 - Recently widowed
	4.9 - About-to-be Widowed
	71.8 - Continuously married
Woman's Race	13.1 - Non-white
	86.7 – White
Woman's Age	19.4 - <60
	80.6 - >60
Woman's Education	35.8 - < 12 Years of Schooling
	38.8 - 12 Years of Schooling
	25.4 - >12 Years of Schooling
Kids < 18 in the Home	7.0 – Yes
	93.0 – No
Woman Employed	19.5 – Yes
	80.5 - No

Table 2 shows the average wealth holdings and the extreme diversity of the distribution of wealth holdings for each of the four groups of women. Four wealth measures are presented: total wealth measures all financial and property wealth holdings for the individual or couple; the next two measures subtract the debt that diminishes the financial security provided by wealth, and the final measure captures liquid (i.e., financial) wealth holdings.

The top ten percent of wave 1 widows have almost 400 times more total wealth lowest than the lowest decile of wave 1 widows. The range for newly widowed women and those who are about to be widowed is not as great. And, it is clearly the smallest for the continuously married, with the top ten percent having only 24 times more wealth than the lowest ten percent. Wave 1 widows and the recently widowed have the lowest median wealth reports, with approximately $40,000 less and $44,000 less, respectively, than the median wealth holdings of the continuously married. Thus, women who have been recently widowed have both lower wealth holdings on average and greater within group dispersion of wealth than the continuously married. Multivariate analyses (not shown here because of page constraints) that control for possible confounding factors (i.e., age, education, race, employment status, presence of minor children, and whether or not one or more components of wealth was imputed) re-affirm these group differences.

Table 2
Patterns of Wealth Holdings by Group (in 1996 dollars)

		Total Wealth	Total Wealth - Unsecured Debt	Total Wealth - Unsecured and Secured Debt	Financial Wealth
Wave 1 Widows	Mean	123,052	120,935	108,199	44,812
	Standard Deviation	152,998	155,583	155,278	94,832
	10th%ile	804	325	0	0
	50th%ile	76,181	75,620	64,313	7,739
	90th%ile	299,482	298,632	263,526	111,934
Recent Widows	Mean	149,063	147,883	138,040	58,497
	Standard Deviation	176,552	176,668	176,084	115,149
	10th%ile	4,779	4,779	58	0
	50th%ile	80,883	77,409	70,199	10,732
	90th%ile	307,324	297,737	287,382	123,487
About-to-Be Widows	Mean	165,985	164,462	156,294	73,442
	Standard Deviation	232,550	232,668	229,439	175,017
	10th%ile	2,152	566	0	0
	50th%ile	107,389	102,537	95,003	13,597
	90th%ile	345,442	344,762	341,427	146,000
Continuously Married	Mean	200,390	198,368	178,484	88,255
	Standard Deviation	229,507	229,758	222,496	170,432
	10th%ile	16,977	11,988	-19,664	113
	50th%ile	120,569	117,022	85,576	21,464
	90th%ile	412,823	407,149	360,202	183,942

The figures in Table 2 suggest that there is not necessarily a discrete change in assets that can be attributed to the widowhood event per se. Rather, wealth appears to be lower for widows than for the continuously married even prior to the death, and the decline continues for some time after the death. This finding is consistent with the work of Hurd and Wise (1989) who also observed relatively long-standing differences in wealth holdings between continuously married and widowed groups in the RHS data.

Our final table estimates the effect on economic well-being if the annuity value of financial wealth holdings are included in income. We estimate for each couple and widow what income would be obtained if financial assets alone were annuitized – that is, paid out over the expected lifetimes of the widow. Table 3 shows the mean annuity value using a 5 percent interest rate computed using the average age-specific life expectancy for a woman in 1990 (Bell, Wade, and Goss, 1992). The addition of annuity income raises the income-to-needs on average. At the extreme end of the distribution, however, it does little to alter the poverty rates of widows. Among wave 1 widows, for example, poverty (defined by income-to-needs less than 1.25) would fall from the 25.7 percent estimated for the module month to 23.9 percent if financial assets were annuitized. But the poverty rates would also fall for the continuously married couples. Indeed, annuitized wealth makes very little difference to the relative poverty rates across these groups. Compared to the continuously married couples, they remain about three times higher for wave 1 widows and recently widowed women and almost twice as high for the about-to-be widowed group.

Table 3
Projected Means for Monthly Income and Income/Needs Augmented by Asset Annuity Payments and Percent of Households in Poverty (Standard Deviations in Parentheses)

	Wave 1 Widows	Recently Widowed	About-to-be Widowed	Continuously Married
Income	2,046	1,849	2,912	3,323
	(1,919)	(1,596)	(4,356)	(2,559)
Income + Financial Asset Annuity Payment	2,442	2,324	3,597	4,038
	(2,493)	(2,238)	(5,112)	(3,317)
Income/Needs	2.67	2.64	3.41	3.82
	(2.30)	(2.12)	(5.40)	(2.82)
(Income + Financial Asset Annuity Payment)/Needs	3.24	3.37	4.29	4.71
	(3.23)	(3.20)	(6.40)	(3.89)
% w/ Income/Needs < 1.25	25.7%	31.6%	14.5%	8.0%
% w/ (Income + Financial Asset Annuity Payment)/Needs < 1.25	23.9%	26.7%	12.5%	6.8%

Conclusions

We draw three main conclusions from this descriptive examination of asset holdings among widows. First, as is the case for income, couples who are about to experience widowhood have somewhat lower wealth holdings than do couples who remain intact. We draw this conclusion from the difference in wealth between continuously married couples (e.g., with median total wealth of $120,569) and the about-to-be-widowed group (with median total wealth of $107,389). Second, there appears to be a further decline in wealth when husbands die. Evidence supporting this contention is drawn from the comparison of the wealth of the about-to-be-widowed group (wealth median of $107,389) and the newly widowed group (wealth median of $80,883). Finally, although income-to-needs rise and poverty rates fall somewhat when the annuity value of financial wealth holdings are added to income, the gain is not large and wealth does not alter the relative differences in economic well-being measures across these groups.

The results of this study could have implications for both consumer educators and financial planners. Widows in the United States continue to face an elevated economic risk. Although the gradual liquidation of their wealth would moderately improve their economic position, it would not completely off-set their lower income levels. We need to know why widows continue to have relatively long-standing differences in both income and asset holdings as compared to similarly aged intact couples. Are assets being drained away to meet the health care costs experienced by these families prior to the husbands' deaths? Are these husbands, upon their deaths, willing significant assets to individuals outside their immediate families? If the answers to questions like these are "yes," then educational materials developed by consumer educators and financial planners need to place greater emphasis on the topics of risk management (e.g., health and life insurance) and estate planning and how they may affect the economic situation of surviving family members.

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Endnotes

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Relative Deprivation in Human Capital Investment in Urban Poor and Middle Class Households in Inchon, Korea

This study examined factors associated with the level of relative deprivation in human capital investment using a sample of 335 households in Inchon, Korea. Regression results indicated levels of deprivation in human capital investment were significantly higher for older household heads or residents of the poor residential class. Household heads with higher education levels or households with a higher level of nonasset income had significantly lower levels of deprivation in human capital investment.

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Introduction

Despite rapid economic growth since the 1960s, economic inequality has been a persistent problem in Korea. Relative poverty has become a more serious issue than absolute poverty. Human capital investment has been recognized as an important factor in individual and household level economic well-being (Becker, 1993; Bryant, 1990). Differential human capital investment can exacerbate economic inequality. Thus, examination of relative deprivation in areas of human capital investment can help family economists understand the determinants of inequality and can inform public officials interested in mitigating disparities in individual and household level economic well-being.

Deprivation exists when level of consumption fails to meet a given standard. *Relative deprivation* measures this standard as the ability to have or to do certain things commonly deemed essential in a society, things that others within the society have or can do. The concept of relative deprivation focuses on level of actual consumption versus level of economic resources, thus, it is important as a theoretical perspective for understanding the level of consumption in poor households as compared to the middle class.

When most or all within a society face similar constraints in resources and, hence, in consumption level, deprivation may not be as great a source of frustration or discouragement than if some groups believed they faced more constraints than other groups. Thus, it is also instructive to examine reports of *subjective deprivation*. In this case, the standard of comparison becomes the survey participant's own view regarding what they think they should have compared to others.

The purpose of this study is (1) to examine the factors associated with relative deprivation in areas of human capital investment in urban poor and middle class households in Inchon, Korea, and (2) to assess the levels of subjective deprivation reported by study participants relative to areas of human capital investment.

Literature Review

Concept of relative deprivation

Merton and Rossi (1957) and Runciman (1966) introduced the concept of relative deprivation as *subjective* deprivation, defined as "feelings of deprivation relative to others". Subsequently, Townsend (1979) emphasized that *objective* deprivation, "a condition of deprivation relative to others", is a more useful concept for explaining the level of living of poor households. Objective deprivation exists when the level of living of a particular household cannot come up to that of an average reference group of the nation.

Townsend (1979) developed a comprehensive concept of deprivation, and suggested "people can be said to be deprived if they lack the material standards of diet, clothing, housing, household facilities, working, environmental and locational conditions and facilities which are ordinarily available in their society, and do not participate in or have access to the forms of employment, occupation, education, recreation and family and social activities and relationships which are commonly experienced or accepted" (p. 413). He and his colleagues argued that deprivation is not the same as poverty. "The first turns on the level of conditions or activities experienced, the second on the incomes and other resources directly available" (Townsend et al. 1987, p. 85). Thus, to understand the effects of poverty in actual living, the concept of deprivation is adequate.

Determinants of relative deprivation in consumption

During 1968 -1969, Townsend asked sixty questions of a sample of 2,050 households throughout Britain, focusing on an objective versus subjective assessment of deprivation. He hypothesized "with a diminishing level of resources, people will engage less fully in the national 'style of living'" (Townsend 1979, p. 59). He verified the relationship between deprivation and income using Pearson's correlation coefficient (Townsend 1979, p. 1168).

In 1983, London Weekend Television (LWT) conducted a large investigation of poverty in the United Kingdom. The LWT research team interviewed 1,174 people over age 17, and asked questions about thirty-five indicators of styles of living (Desai 1986). Results of the regression analysis indicated that the relationship between deprivation and the reciprocal of income was curvilinear (Desai 1986; Mack and Lansley 1985).

Desai and Shah (1988) used a deprivation measure related to the Townsend measure. They obtained information from the 1968/1969 Townsend data on the socio-economic characteristics of households (income, family type, health, education, region and origin) and used dichotomous logit analysis to assess the existence of deprivation. They concluded that income was neither the sole nor the most important indicator of deprivation. This conclusion may be quite relevant to the analysis of Korean data. Compared to other newly industrialized countries, income distribution in Korea is relatively equal, but the distribution of wealth is so seriously skewed that the Gini coefficient is over 0.9 (Korean Research Committee for Public Concept of Land, 1989). Therefore, it could be shortsighted to conclude that income is the sole determinant of deprivation of Korea.

While income certainly has a significant impact on consumption (Keynes [1936] 1973), other economic resources such as assets may also influence consumption levels. Education level of the household head may influence the level of resources available to the household and, hence, the level of consumption (Becker 1964; Mincer 1974; Schultz 1963). The work of Ando and Modigliani (1963) and of Modigliani and Brumburg (1955) posits that consumption patterns change over the individual and family life cycle, suggesting age of household head and household size may influence consumption levels.

Residential segregation by social class in Korea has been expedited due to the construction of new large-scale residential areas in urban Korea since the mid-1970s (Lee 1980, 1982; Hong and Kim 1988; Hong 1992; Park 1992). Therefore, residential class may also be an important determinant of relative deprivation.

This study is based on Townsend's hypothesis that resources determine deprivation. Relative deprivation is operationalized consistent with Townsend's definition - lacking specific material items that are "ordinarily available." On the basis of previous research and characteristics of Korean life, factors thought to influence level of relative deprivation include: age and education level of household head, number in household, nonasset income, asset level of the household, and household residential class. This study also uses the concept of deprivation as "feelings of deprivation relative to others" to assess study participant's subjective views of their consumption in health, medical care, and education relative to other specific reference groups.

Method

Data

The survey population of the Poor Residential Class (PRC) was those people residing in 75 areas in Inchon city designated as "areas which have been identified as needing significant environmental improvements for urban low income residents by Inchon city" (Inchon City Government, 1991a). Twenty out of 75 areas were selected as the PRC sample areas using a sampling proportionate to the size of urban low income residents in the six city wards (in Korean, gu). The survey population of the Middle Residential Class (MRC) was those people residing in "24 middle class areas in the six administrative units called gu in the city of Inchon" (Inchon City Government, 1991b). All of these areas were selected as MRC sample areas. Twenty households from each PRC sample area (20 * 20 = 400), eight households from each of 12 MRC sample areas and nine households from each of another 12 MRC sample areas (8 * 12 + 9 * 12 = 204) were selected using a two-stage stratified systematic sampling. The ratio of PRC to MRC was 2:1

After a preliminary survey, data on 604 households were collected by the researcher through interviews with the principal woman of the household in November, 1991. After excluding households in the middle residential class whose household heads were not employed; households in the middle residential class with net assets below 30,000,000 won; households in the poor residential class with net assets greater than or equal to 30,000,000 won; households who did not report complete information on all the dependent and independent variables, 563 households remained. From that group, the analysis in this study focused on the 335 households with children between 5 and 17 years old since this household type would face a strong social norm regarding investing in the children's education.

Statistical model

The multiple regression model used in this study was:

$$Y = b_0 + b_1AGE + b_2EDUC + b_3NFAM + b_4NAINC + b_5ASSET + b_6PRC + e \qquad (1)$$

where Y is the level of relative deprivation in consumption in areas of human capital investment; AGE is age of the household head; EDUC is education of the household head; NFAM is the number in the household; NAINC is nonasset income of the household; ASSET is assets of the household, PRC is residential class (PRC = 1, MRC = 0) and e is a random error term.

Variables

Dependent variable. The index of relative deprivation in human capital investment was based three sources. Some items were drawn from Townsend (1987) and Mack and Lansley (1985) adapted to Korean culture. Other items were based on professional judgment and knowledge of lifestyles in Korea. Study participants were asked about relative deprivation in areas of health, medical care, and education. The specific components assessed for each area are presented in Table 1. For each item, deprivation was indicated by the score of 0 in the case of nondeprivation, and by the score of 1 in the case of deprivation. The level of relative deprivation in each consumption category was the sum of the scores from five items, thus for each consumption category, the range was from 0 (not deprived on any measure) to 5 (deprived on every measure). The indexes for health and medical care and education were combined to yield a measure of relative deprivation in areas of human capital investment. Values of this index could range from 0 to 10.

Table 1
Measures of relative deprivation in health and education

Consumption Items	Deprivation Measures
Health & Medical Care	1. No dental treatment 2. Problem of chronic disease of one of the household members 3. No medical treatment from doctors 4. No exercise for health such as ping pong, tennis or mountain climbing 5. No basic inexpensive equipment for sports or mountain climbing such as ping-pong paddles or appropriate footwear to hike the mountains
Education	1. Not being able to afford education expenses such as tuition, school fees, or kindergarten and nursery school fees during last six months 2. Neither encyclopedia, Korean dictionary, children's books, novels, nor science books 3. No help sessions with private tutor 4. No consulting with children's school or kindergarten teacher 5. No subscription of study materials

Independent variables. The proposed determinants of relative deprivation in this study were age and education level of the household head, number in household, nonasset income of the household, assets of the household and residential class. Age and education of household head were measured as continuous variables in number of years. Number in family was the count of all individuals residing in a household. Nonasset income was defined as total household income excluding asset income, measured in won. Typically, this was labor income. Assets were measured in won as total assets net of total debt. Residential class was divided into PRC and MRC, with MRC assigned as the reference category. The operational definition of PRC was those who live in squatter areas which have been identified as needing significant environmental improvements and whose assets are below thirty million won. MRC was defined as those who reside in an ordinary residential area and whose assets are more than thirty million won.

Results and Discussion

Means and standard deviations of the dependent and independent variables are reported in Table 2. On average, survey participants reported low levels of relative deprivation in areas of health, medical care, and education. The average household was headed by someone in their early 40s with 11 years of education. Households had about 4 members, in general. Household labor income was about 1,320,000 won [3] per month while net asset holdings were about 102,660,000 won. Most survey respondents, 66%, resided in a poor residential class.

Regression analysis results are reported in Table 3. In general, the model performed well. The independent variables explained almost half of the variance in the dependent variable. Age of the household head and residence in the poor residential class were significantly and positively associated with higher levels of relative deprivation in areas of human capital development. The age of the household head may be capturing some family life cycle effects. Older household heads are more likely to have chronic health problems but less likely to have a lifestyle focused on exercise for health improvement. They are also more likely to have teen-aged children who are expected to go to college. Parents who believe that their children's future level of living

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will be determined by the quality of their postsecondary education (more precisely education from a highly ranked university in the hierarchical order of universities in Korea) will spend large sums of money for private education in addition to the expenditures required for public school. While food expenditure accounts for 28% of total household expenditure, educational expenses constitutes 16 % of total expenditure for those households headed by someone in their 40s. The level of educational expenditure share is compared to 2.5% for the households headed by someone in their 20s, 4.8% for those in their early 30s, and 11.2% for those in their late 30s (National Statistical Office, ROK, 1996). Inability to afford tuition expenses, sessions with private tutors, or study materials would contribute to relative deprivation in areas of human capital investment.

Residence in a poor area may proxy limited access to health and educational resources compared to residence in a middle-class area as well as other constraints not captured in the empirical model used in this study. In Inchon city, the poor residential areas are identified as the place where low income urban households reside; these are also areas that need significant environmental improvements. In Korea, the residential class does not simply represent differences in physical residential environment. Households living in similar residential areas share the common cultural and moral aspects of family life.

Higher levels of education of the household head and nonasset income are associated with lower levels of relative deprivation in areas of human capital investment. It may be that household heads with higher levels of education understand the importance of human capital investment for themselves and other family members, consequently, efforts are directed towards meeting household member's needs relative to health and education, perhaps at the expense of consumption in other areas. Higher levels of nonasset income, of course, facilitate acquisition of the items used to assess deprivation, reducing the level of deprivation experienced.

Table 2
Means and standard deviations of dependent and independent variables

Variables	Means (Standard Deviation)
Human Capital Deprivation Index	4.28 (2.35)
Age HH head	42.75 (7.46)
Educ. HH head	11.06 (3.36)
HH Size	4.22 (0.89)
Nonasset income	1,317,000.00 (1,217,600.00)
Assets	102,659,000.00 (329,070,160.00)
Reside in PRC	0.66 (0.48)

Table 3
Multiple regression analysis of relative deprivation in human capital investment

Independent Variables	Parameter Estimate
Age HH head	3.29** (0.01)[a]
Educ. HH head	-0.15*** (0.04)
HH Size	-0.10 (0.11)
Nonasset income	-0.002* (0.001)
Assets	0.36E-6 (0.31E-5)
Reside in PRC	2.34*** (0.27)
Constant	3.29 (0.92)
Adjusted R^2	0.49

[a] Standard errors given in parenthesis.
*** $p < .001$
** $p < .01$
* $p < .05$

In Table 4, the report of study participants regarding their subjective assessment of their consumption of health and education compared to relatives, neighbors, and the country at large is given. It is interesting that for both health and education, a vast majority of participants felt their levels of deprivation were "about the same" as any of the three comparison groups. However, for either health or education, participants were more likely to judge that they were "much worse off" when comparing themselves to the "average in the country" than when comparing themselves to relatives or neighbors of the same age. It would seem that the more distant and amorphous the comparison group, the greater the disparity between self and that other was judged to be. However, the "closer to home" the comparison group, the smaller the disparity between self and other was judged to be.

Correlation analysis between levels of relative and subjective deprivation was conducted to examine the relationship between the two different types of measures. Results indicated that the correlation between subjective assessment of deprivation in health and medical care and relative deprivation in human capital investment areas was .38 when the comparison group was relatives, .33 when the comparison group was neighbors like me, and .47 when the comparison group was the average in the country. The correlation between subjective assessment of deprivation in education and relative deprivation in human capital investment areas was .50 when the comparison group was relatives, .39 when the comparison group was neighbors like me, and .59 when the comparison group was the average in the country. Correlation for subjective deprivation in education and relative deprivation in human capital investment are slightly higher, perhaps reflecting keener attention to levels of education consumption given the social norms relative to education in Korea.

Table 4
Proportions of reported levels of subjective deprivation for health and education

Consumption Category	Reported Level of Subjective Deprivation				
	Feel much better off	Feel slightly better off	Feel about the same	Feel slightly Worse off	Feel much worse off
Health and medical care					
Compared with					
Relative	2.4	14.6	67.5	13.7	1.8
Neighbors of same age	0.9	15.2	72.5	10.7	0.6
Average in the country	1.2	13.4	58.8	23.9	2.7
Education					
Compared with					
Relative	1.8	9.6	61.5	22.4	4.8
Neighbors of same age	1.5	11.6	73.1	11.6	2.1
Average in the country	1.2	10.1	48.4	31.3	9.0

Summary and Implications

Measures of relative deprivation indicate the degree to which people do not have items ordinarily consumed within a society. This measure provides a different way of assessing poverty than looking at economic resources alone. In areas of human capital investment, the consumption-based measure of relative deprivation is useful. If human capital investments are made by some groups but not by others, economic differences between those groups can become larger as deficits in health or education limit productive ability.

Subjective measures of deprivation gives a different way of assessing deprivation. If most or all within a society believe they face similar constraints in consumption compared to others, real deficits in consumption may be tolerated. However, if some groups believe they face greater deprivation than others, frustration and social division between those who think they are the "have nots" among the "haves" can arise.

Results of this study indicate that average levels of relative deprivation in health, medical care, and education are fairly low. Lower levels of deprivation were associated with having a household head with higher levels of education and nonasset income. Both factors alter the resource base of a household and may influence consumption choices. Household heads with higher levels of education may cut back in other areas of consumption when necessary to focus available resources on education of household members. Correlation between relative and subjective measures of deprivation is higher for education. Higher levels of deprivation were associated with older household heads and residence in the poor residential class. With respect to investment in health, older household heads are more likely to have chronic health problems. Moreover, they are less likely to have a lifestyle that includes daily exercise for health maintenance, even though low cost activities such as mountain climbing or playing ping-pong are available. Older householders are also more likely to have children in high school versus children in kindergarten. In Korea, parents are expected to invest heavily in their children's education and these expectations and costs increase as the child becomes older. As children near completion of high school, parents may experience a high level of relative deprivation due to the high level of private educational expenditures thought needed to prepare to send their children to a highly ranked university.

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In the current Korean economic crisis, there is a wave of lay-offs occurring for middle-aged (40s) and even younger age groups (30s). Also, residential segregation continues with the less educated residing in the poor areas. Both trends would reduce access to the very factors found in this study to be associated with lower levels of deprivation. Should these trends continue, it is likely that levels of both relative and subjective deprivation in areas of human capital investment will increase, leading to a net loss of human potential for the country as a whole.

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[3] The exchange rate in 1991 was $1 per 750.30 won. Thus, household labor income would be $1,755.30 and net asset holdings would be $136,823.94 if converted to US dollars.

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Factors Related to Risk Tolerance: A Further Examination

This paper reports the findings from regression models that were developed to predict financial risk tolerance using demographic and socioeconomic factors. Using a sample of white-collar clerical workers (N = 220), it was determined that financial knowledge, income, education, ethnic background, financial solvency, number of dependents, and homeownership can be used to predict a person's financial risk tolerance.

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Financial risk tolerance, which is defined as the maximum amount of uncertainty that an individual is willing to accept when making a financial decision, impacts almost every part of economic and social life. For example, answering questions that explain consumer behavior in relation to earnings, expenditures, and savings can be enhanced by understanding and predicting individual financial risk tolerance.

Although the importance of accurately assessing financial risk tolerance is well documented, the actual practice of assessment tends to be very difficult due to the subjective nature of risk taking. However, over the past ten years several consumer and family financial economists have taken steps to better understand financial risk tolerance by building upon previous financial risk taking models. The purpose of this paper is to present research findings that expand upon recent attempts to explain and predict financial risk tolerance. Specifically, this paper reports the findings from Ordinary Least Squares regression analyses that were developed to predict financial risk tolerance using demographic and socioeconomic factors as explanatory variables.

Review of Recent Literature

Risk-tolerance literature suggests that several factors have an impact on a personal risk-taking propensities. By far, the most commonly assumed predictors of financial risk tolerance tend to be demographic in nature. For example, gender, age, marital status, income, ethnicity, and education have been hypothesized to influence financial risk tolerance (Bajtelsmit & Bernasek, 1996; Grable, in press; Grable & Joo, 1997; Grable & Lytton, 1998; Haliassos & Bertaut, 1995; Lee & Hanna, 1995; Masters, 1989; Palsson, 1996; Quattlebaum, 1988; Shaw, 1996; Sung & Hanna, 1996; Wang & Hanna, 1997; Zhong & Xiao, 1995). Socioeconomic factors, such as housing ownership, the number of dependents within a home, financial knowledge, and financial solvency also have been shown to influence financial risk tolerance (e.g., Sung & Hanna).

In general, it has been argued that (a) females are less risk tolerant than males; (b) married individuals are less risk tolerant than singles; (c) older persons are less risk tolerant than younger persons; (d) non-Whites are less risk tolerant than Whites; (e) those with low levels of income and education are less risk tolerant than others; (f) persons who rent are less risk tolerant than those who own their own home; (g) as the number of dependents increases risk tolerance decreases; (h) individuals with low levels of financial knowledge are less risk tolerant; and (i) persons with low solvency ratios tend to be less risk tolerant than those with high solvency ratios. Others have suggested that marital status combined with gender (e.g., single females, single males, and married couples) plays a role in shaping risk tolerance attitudes, with single females having lower risk tolerances than either single males or married couples (e.g., Sung & Hanna, 1996).

Although there are data to support the continued use of demographic and socioeconomic factors as predictors of financial risk tolerance, researchers have not yet obtained general consensus regarding the strength of relationships or the causal effects of relationships. The purpose of this study is to add to the growing body of knowledge regarding financial risk tolerance by testing the factors described above in regression models of risk-taking attitudes.

Methodology

Data for this study were obtained from a random sample of white-collar clerical workers from a large southwestern university in 1998 (N = 220). Survey respondents received an assessment instrument which inquired about respondent's financial risk tolerance and other issues (e.g., financial satisfaction, financial behaviors, financial stress levels, financial knowledge, solvency levels, and demographic characteristics). The survey design, and selection of participants, was treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 1992).

A respondent's financial risk tolerance was determined by combining responses to four financial risk questions into a risk-tolerance index. The four questions (Table 1) were developed and adapted from previous studies (e.g., Grable, in press). Specifically, respondents answered the questions using a four point Likert-type scale, with the following options: (a) strongly agree, (b) tend to agree, (c) tend to disagree, and (d) strongly disagree. Possible risk tolerance scores ranged from 4 to 16, with higher scores representing higher levels of financial risk tolerance. The average risk-tolerance score was 8.87. The index was found to be reliable with a Cronbach's alpha of .71, which was above acceptable levels as outlined by Pedhazur and Schmelkin (1991) for attitudinal measures.

Table 1

Financial Risk-Tolerance Assessment Items

In terms of investing, safety is more important than returns.	SA 1	TA 2	TD 3	SD 4
I am more comfortable putting my money in a bank account than in the stock market.	SA 1	TA 2	TD 3	SD 4
When I think of the word "risk" the term "loss" comes to mind immediately.	SA 1	TA 2	TD 3	SD 4
Making money in stocks and bonds is based on luck.	SA 1	TA 2	TD 3	SD 4

Data Analysis

Ordinary Least Squares regression was used as the method of analysis. This method differs from previous research within the domain of financial risk tolerance which has tended to rely on statistical analysis methods that are designed to handle dependent variables that are measured at the nominal or ordinal level. For example, Grable and Lytton (1998), Sung and Hanna (1996), and Wang and Hanna (1997) used discriminant analysis, logit, and tobit, respectively, to assess financial risk tolerance using a single question, measured at the ordinal level, from the Survey of Consumer Finances. The use of ordinary least squares techniques has not been widely used because a financial risk tolerance measure that is reliable, valid, and continuous in measurement has not been widely available or utilized.

This analysis of the predictors of financial risk tolerance applied the risk-tolerance scale described above as the dependent variable. Again, the index provided a useful continuous financial risk tolerance assessment with a minimum possible score of four and a maximum possible score of 16. In order to examine the effects of demographics and socioeconomic characteristics on financial risk tolerance ordinary least squares regression models were developed. The models included respondents' gender, age, marital status, education, income, ethnic background, financial knowledge, housing ownership, number of dependents, and financial solvency. These variables were included because they represented similar types of variables found in the literature (e.g., Grable, in press; Sung & Hanna, 1996; Wang & Hanna, 1997). A description of the independent variables is presented in Table 2.

Table 2

Variable Definitions

Gender	Female = 1; Male = 0
Age	Actual Age
Marital Status	Married =1; Single = 0
Income	Ten Levels: Less Than $20,000 to Above $100,000
Education	Above College Degree =1, Otherwise =0
Ethnic Background	White = 1; Non-White = 0
Home Ownership	Yes = 1; No = 0
Number of Dependents	Actual Number
Financial Knowledge	Ten Levels: Lowest to Highest
Solvency Ratio	Five Levels: Would Be In Serious Debt to Would Have Money Left Over

Respondents Demographic Characteristics

The majority of respondents were female (87%). The average age of respondents was 43 years, with the largest group (31%) being in their 40s. The majority of respondents (84%) had above high school (e.g., trade, vocational training, some college, college, or graduate degree). Sixty-nine percent of respondents had household income less than $50,000, with an average income of $34,000. Approximately 64% of respondents were married. Seventy-seven percent of respondents reported being White, with the remainder (22%) indicating being either Hispanic or African American. Thirty-seven percent of respondents reported having an average level of financial knowledge, while 37% reported having above-average knowledge. Only 26% indicated that their financial knowledge was below average. Respondents also reported an average of 2.65 dependents. Finally, 66% of respondents owned their own home.

Results and Discussion

Collinearity diagnostics (not shown) were used to examine possible multicollinearity problems among the independent variables. No problems were discovered. The regression model was designed to determine which factors could be used as predictors of financial risk tolerance, holding other factors constant. Ten independent variables were included (gender, age, marital status, income, education, ethnicity, home ownership, financial knowledge, number of dependents, and financial solvency). The full model explained 24% ($F = 5.98$, $p < .001$) of the variance in financial risk tolerance. As shown in Table 3, education, income, ethnic background, financial knowledge, home ownership, the number of dependents, and financial solvency were significant predictor variables at the .05 level.

Table 3

Factors Related to Risk Tolerance: Regression Results (N=202)

Variable	b	Beta	t
Constant	6.37		6.55
Gender	-.40	-.06	-.93
Age	.02	.11	1.48
Marital Status	.47	.10	1.12
Education	1.13	.24	3.35**
Income	.21	.21	2.75**
Ethnicity	-1.20	-.22	-3.04**
Financial Knowledge	.24	.21	3.26**
Home Ownership	-.81	-.17	-2.08*
Number of Dependents	-.24	-.17	-2.11*
Financial Solvency	.34	.18	2.45*

$R^2 = .24$ $F = 5.98$**

** $p < .01$ * $p < .05$

It was determined that, holding all factors constant, important predictors of financial risk tolerance were education, a person's financial knowledge, and income. Specifically, the greater a respondent's attained education, financial knowledge, and income the greater their financial risk tolerance. It was also determined that non-White respondents tended to be more risk tolerant. A respondent's home ownership and number of dependents were found to have a negative relationship with a person's risk tolerance. Also, a respondent's solvency level was important in predicting risk tolerance, with those having higher solvency ratios being more risk tolerant.

The positive relationship between education, financial knowledge, and financial risk tolerance found in this study generally supports similar conclusions presented by Cutler (1995), Grable (in press), Grable and Joo (1997), and Haliassos and Bertaut (1995). These researchers suggested that individuals who have more knowledge of risk and risky situations tend to have a common psychological profile that allows them to undertake greater financial risks (Sung & Hanna, 1996).

Findings related to income being a good predictor of financial risk tolerance supports previous research findings. For example, Cicchetti and Dubin (1994), Lee and Hanna (1991), Riley and Chow (1992), Schooley and Worden (1996), Shaw (1996), and Sung and Hanna (1996) determined that risk tolerance varies systematically with levels of income, and that individuals with higher incomes tend to have greater financial risk tolerances. A similar pattern involving financial solvency supports a research conclusion presented by Sung and Hanna who determined that individuals with higher levels of financial solvency, as measured by liquid assets being greater than non-investment income, were more risk tolerant than those with low levels of financial solvency.

Findings from this research varied from previous research conclusions in four significant ways. First, in this analysis respondents' number of dependents was statistically negatively significant, indicating that the more dependents a person had, the less risk tolerant that person tended to be. This contradicts a conclusion developed by Sung and Hanna (1996) who found no relationship between household size and risk tolerance. The second significant finding from this research involves age as a predictor of financial risk tolerance. Practitioners and researchers have long believed that age was negatively related to risk tolerance (e.g., Morin & Suarez, 1983; Wallach & Kogan, 1961). The results of this study suggest this assumption is not necessarily true. Holding all other factors constant, age was not a significant predictor of financial risk tolerance. This finding, while contradicting a long held belief, supports findings from other research (e.g., Grable & Joo, 1997; Grable & Lytton, 1998; Wang & Hanna, 1997). Third, findings indicating that homeowners were less risk tolerant than others was unique to this research. Fourth, the finding that suggested non-Whites were more risk tolerant than Whites contradicts findings by Haliassos and Bertaut (1995), Sung and Hanna (1996), and Zhong and Xiao (1995) who concluded that non-Whites may not be encouraged to invest in more risky investments due to cultural values, preferences, and tastes. However, this finding supports Leigh (1986) who used econometric models to conclude that non-Whites were more likely to prefer more risk than Whites.

Finally, it is interesting to note the other independent variables which were not statistically significant in predicting financial risk tolerance. For example, it was also determined that marital status and gender were not significant predictors of financial risk tolerance. These findings are important because they contradict much of the previous literature (e.g., Grable, in press; Masters, 1989; Sung & Hanna, 1996; Zhong & Xiao, 1995), suggesting that the importance of these demographic and socioeconomic characteristics as predictors of risk tolerance diminishes when factors such as financial knowledge and income are accounted for.

Due to the potential controversy surrounding the gender finding, additional analyses were conducted to further test whether gender could be used as a predictor of financial risk tolerance. Three additional regressions (not shown) were undertaken to test a conclusion presented by Sung and Hanna (1996) who determined that single women are less risk tolerant than single men. The first regression model was developed to test the combined relationship between gender and marital status on financial risk tolerance (i.e., married couples, single males, and single females). In this case, there were no differences in risk tolerance scores between and among these groups. Further, the sample was divided into two groups to examine the combined relationship between gender and marital status. In the second regression model the sample was delimited by including only single respondents. Thus, the marital status variable was removed. Again, gender was not found to be a significant predictor of financial risk tolerance when other factors were accounted for. The third regression model was delimited to include only married respondents. Yet again, gender was not found to be a significant predictor.

Implications

Three important implications are worth noting for those who are interested in the assessment and prediction of financial risk tolerance. The first important implication from this research is the impact that financial knowledge has on risk tolerance. In each regression model financial knowledge was one of the most important factors in determining a respondent's financial risk tolerance. This is good news for financial planners, counselors, educators, and consumer specialists because it indicates that financial risk tolerance may not be a fixed psychological trait. Instead, risk tolerance appears to be somewhat elastic. A study conducted by Grable and Joo (1998) who used data from a quasi-experiment designed to assess financial knowledge, attitudes, and behaviors, indicated that financial education provides an effective method for changing attitudes, especially risk tolerance. Thus, it may be possible to positively affect a person's quality of life by providing financial education, which will increase financial knowledge and risk tolerance, which, in turn, may lead to different financial and consumer choices being made.

The second important implication from this research involves the realization that not all demographics can be used to predict financial risk tolerance. For example, age was an insignificant predictor variable. In general, practitioners, educators, and researchers should consider the words of Grable and Lytton (1998) who pointed out that "instead of relying on statistically insignificant demographic factors, such as age, to differentiate among levels of risk tolerance and to classify individuals into risk-tolerance categories, financial planners, counselors, and investment managers would be better advised to use demographic variables which optimize the separation of risk tolerance" (p. 69).

The third implication to emerge from this study involves the use of demographic and socioeconomic factors as determinants of financial risk tolerance. It is important to note that these factors only explain a small amount of variance in a person's financial risk-tolerance profile. Findings from this study are in line with reported coefficients of determinants in the literature which suggest that demographics and socioeconomic characteristic explain less than 30% of a person's risk taking propensities. However, industry has typically used these type of factors as critical predictors of risk tolerance. Further, financial services practitioners often assume that one factor alone (e.g., age or gender) can be used as a reliable predictor. This assumption is based on a bivariate relationship between risk tolerance and demographic predictors. Findings from this research suggest that when other factors such as financial knowledge, financial solvency, and number of dependents are included in a model to predict financial risk tolerance, factors such as age and gender become less effective predictors.

As is the case with most research that attempts to test relationships between and among financial risk tolerance and determining variables, such as demographic and socioeconomic factors, this research presents additional questions that still need to be addressed. For example, are there other theoretically plausible determinants of financial risk tolerance that should be included in a comprehensive model of risk-taking attitudes? Are results based on this sample (i.e., racially diverse but homogeneous in occupation) representative of results that would be obtained from a different population? These, and other, questions can only be answered through additional research endeavors. It is recommended and hoped that researchers and educators who are interested in this vital topic will continue to push the envelope of knowledge wider so that a comprehensive understanding of the determinants of financial risk tolerance can one day be obtained.

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Information Disclosure and Consumers' Understanding: A Case Study of New Leasing Disclosures

Consumers' understanding of selected leasing disclosure terms was examined with data from the University of Michigan's Survey of Consumers. It provides a "before" snapshot of consumers' understanding of leasing terms and conditions prior to new Consumer Leasing Act disclosures; by replicating this study in a few more years, policy makers will be better able to assess its impacts. The current study reveals some issues for today's consumer educators.

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Introduction

Of the various means in policy makers' tool kits for protecting consumers, information disclosure has been among the most popular (see, for example, Durkin and Elliehausen's discussion of Truth in Lending, 1990). The theory holds that with key information disclosed, the marketplace becomes more transparent to consumers, who are then able to make efficient decisions; market effectiveness improves and society is better off. From a policy analysis perspective, the question is, "does this really work?" The purpose of this paper is to explore information disclosure as a consumer protection tool, using recent changes in Regulation M, which governs the Consumer Leasing Act, as a case study.

Background on Consumer Leasing

The incidence of automobile leasing has grown from 13% of new vehicle deliveries in 1990 to nearly 39% of new vehicles delivered during the first half of 1998 (CNW Marketing Research, 1998). Concerns have also grown about some abuses emanating from automobile lessors, such as "disappearing" down payments and trade-ins (O'Loughlin and Desjardins, 1988). Regulation M, the consumer leasing component of the Truth in Lending Act, covers automobile leases, but it did not require lessors disclose to consumers many facets of the lease agreement. Comparison shopping was very difficult, and consumers rarely were able to judge whether they were receiving the best terms possible on their lease agreement.

This difficulty was compounded by the fact that automobile leases rank as one of the more complex financial transactions consumers can enter. Responding to the need to protect consumers, the Division of Consumer and Community Affairs of the Federal Reserve Board rewrote Regulation M to require that lessors disclosure several key terms and conditions of consumer leases.[4] These reforms became effective on January 1, 1998. In addition to standardizing the format of disclosures, the new rules require disclosure and itemization of amounts due at lease signing, disclosure of the payment schedule and how the payment was determined, disclosure of other charges not part of the monthly payment, and the total of payments. Any fees, warranties, or penalties must be disclosed, and the lessor must describe the lessee's responsibilities to maintain the vehicle.

Now that the regulations are in place, the question is, "will consumer understanding of leasing improve as a consequence of the new disclosures?" If consumer understanding can be augmented, the assumption is that consumers will make better decisions in the long run. Whether heightened awareness will increase or decrease the demand for automobile leases is uncertain, but the key issue is whether consumers are able to make better economic choices as a result of the new information provided by disclosures.

Previous Research

The Economics of Information

The rationale for disclosures becomes apparent when looking at economic theory. Traditional economics suggests that the price of a given good or service is a function of consumers' willingness to pay for the good (demand) and industry's production of that good (supply). Traditional economics assumes that consumers have perfect information about prices, products, and substitute goods, and the synthesis of this information allows consumers to engage in rational decision making where the outcome of an action is an optimal economic decision.

The economics of information challenges the assumption of perfect information by arguing there is a supply and demand for information (see, for example, Stigler, 1961; Ippolito, 1988; and Russo, 1988). That is, the level and quality of information acquired and used by a consumer depends on the availability of information and the costs (in time and resources) of acquiring it. As a consequence, a consumer is not perfectly informed because some information is costly to collect and utilize, and other information is not readily available to consumers. Also, all information is not equally reliable (see Feick, Hermann & Warland, 1986; Keller & Staelin, 1987; Bone, 1995).

A market with asymmetric information tends to suffer from inefficiencies and non-optimal behavior. Producers or sellers may have market power allowing them to keep prices at a higher level than under perfect competition. In certain cases, a market where there is wide occurrence of asymmetric information may require government intervention to restore balance (Mazis and Staelin, 1981; Mazis, Staelin, Beales, and Salop, 1981). Regulation M offers such an intervention by requiring lessors to provide lessees with certain standardized information before signing a lease agreement. These disclosures have the intent of reducing the cost of obtaining information specific to the lease agreement and of increasing the supply of information used by consumers in making their decision to lease an automobile.

Information Use, Theory of Understanding, and Role of Regulation

A policy goal such as achieving improved consumer understanding can be elusive without an agreement as to what understanding is. Mazis and Staelin (1981) discuss a broad model for characterizing the process by which a person gains understanding. The steps include exposure (disclosure of information), attention (consumer selects some information for further processing), comprehension (consumer assigns meaning to the message), retention recollection (information is stored in memory) and decision making (consumer sorts out data and processes information to make decisions). Each step of the model represents a different stage in the process of understanding. Researchers have placed information and disclosure requirement provisions of public policy within the exposure and attention steps of this model (see Wilkie, 1975; Beales, Mazis, Salop & Staelin, 1981; Ratchford, 1982; McAlexander & Scammon, 1988). When discussing consumer policy, the primary concern is cases where the consumer is not exposed to the data or information to begin with and thus never has the opportunity to process the information necessary for making an optimal economic choice.

Evaluating the Impacts of the Intervention

Agencies that develop public policies have an interest in determining the effectiveness of such policies. This requires consideration of the users of the evaluation, a framework for the evaluation, and an assessment of the goals the program is intended to meet (Patton, 1997; Rossi and Freeman, 1993). Mohr (1995) offers a model of impact analysis, defined as "determining the extent to which one set of directed human activities (X) affected the state of some objects or phenomena ($Y_1, \ldots, Y_k$) and -- at least sometimes -- determining also why the effects were as small or as large as they turned out to be." The model typically looks like:

$$Y_1 \rightarrow X \rightarrow Y_k \tag{1}$$

where X is a program or policy intervention, and Y denotes two sets of data collected by the evaluating agency. Phillips and Calder (1979) called this model a "before and after" design for program evaluation. Y_1 is from a period directly before the intervention, and Y_k is from a period or periods after the intervention has been implemented. The advantage of impact analysis is it allows evaluators to disentangle the effects of the program from other effects (e.g., economic, social) (Vedung, 1997).

Several other models of program evaluation have been posited (see Day & Brandt, 1974, Mazis, Staelin, Beales & Salop, 1981; Bloom, 1989). However, in this study, Mohr's model seems most appropriate. It is possible to obtain an appropriate baseline (Y_1) against which to measure changes in consumer behavior and conditions in the market. The impact of the new disclosures required under the Consumer Leasing Act's Regulation M will need to be measured at a future (Y_k) date.

Data, Methodology, and Analysis

To address the question of what consumers know and understand about leasing at time Y_1, we used the Surveys of Consumers, which are conducted on a monthly basis by the Survey Research Center of the Institute for Social Research at the University of Michigan. In March through June 1998 the Surveys of Consumers included questions on vehicle leasing commissioned by the Federal Reserve Board. The questions were specifically designed to determine households' reasons for leasing automobiles, their overall attitude towards and satisfaction with leasing, the types of information sources used when shopping for a car, their familiarity with the terminology of leasing, and their understanding of the vehicle leasing process. Following Mazis' model, specific questions covered exposure, attention, and comprehension of leasing terms and conditions.

Over the four months, a total of 2003 respondents participated in the Surveys. Three filters were used to establish which households were to be included in the analysis. The first filter eliminated all households who had no consumer leasing experience. The second filter eliminated respondents who were not involved in their household's leasing decision; respondents who read and/or signed a lease were included in the analysis. Third, we determined whether consumers received the "old" or the "new" Reg M disclosures. Leases signed prior to September 1997 were most likely the old disclosure format; those signed in December 1997 and after would have been in the new format. Eight respondents who signed their leases between September and November were excluded from the analyses since it was not possible to know which disclosures they received (McCathren, 1998). Of the 2003 respondents in the data, only 118 met our criteria. Due to the limited sample size (N = 118), only descriptive and bivariate statistics were generated.

The demographic variables included in analysis were race/ethnicity, gender, age, education, household income, marital status, household size and region. We also included measures of lease status, leasing experience, shopping for leasing information, and types of information sources used. A score variable was created to measure respondents understanding of vehicle leasing terms and conditions. The variable was formed by summing points from three questions that measured consumers' recall of receiving disclosures (exposure), their general understanding of specific lease terms (attention), and their comprehension of lease terms and conditions. Respondents received one point for each disclosure they recalled receiving, one-and-one-half points for claiming to know the general meaning of selected disclosures, and two points for each correct answer provided on a true/false comprehension quiz. Scores ranged between 0 and 49.5.

Results

Sample Description

The majority of the respondents in the sample were white (85%). Slightly over one-half (52%) of the respondents in the sample were female; however when divided by lease status, there was a higher proportion of males in the "currently leasing" category (53%) and a higher proportion of females in the "previously leased" category (67%). The majority of the respondents were between 25 and 54. Over 95% had completed high school and a substantial proportion (55%) had a post-high school degree. The majority of the respondents were married. The largest proportion of households (47%) fell into the $40,001 to $75,000 income category. These findings are consistent with industry market research data on lessees (CNW Marketing/Research, 1998). Most leasing households (73%) had two adults; some of these households had children living at home. The largest proportions of leasing respondents lived in the Midwest and South (28 % and 30%, respectively).

Information Sources

Point of sale (POS) sources were the most frequently cited sources of information when shopping for a leased vehicle. Over four-fifths (84%) of the sample reported asking questions at the dealership and nearly half (48%) reported using written information from the dealership or leasing company. Nearly one-third (31%) obtained information from ads; third party and personal information sources were cited less frequently. Among third-party sources, almost one-third (31%) cited using articles in magazines, newspapers, or on the Internet, over one-fifth (22%) cited using consumer publications; very few (4%) cited using government publications on leasing. The most-often cited personal source of information was family, friends and co-workers (36%); one out of ten (11%) cited using advice from a financial services professional.

Comprehension "Quiz" Results

Most respondents knew that there are mileage limits on a lease (98% correct, column 3 in Table 1), that when you lease you do not own the vehicle (97%), that you might face excess wear and tear charges at the end of a lease (86%), that most leases are for two to four years (83%), that you could face several thousand dollars in early termination charges if you end your lease early (79%), and that monthly lease payments are usually lower than monthly loan payments (74%). Fewer respondents knew that you may not have to make a down payment when you lease (65%), that it's generally less expensive to get a higher mileage lease than to pay for extra mileage at the end (57%), and that you may have to pay a disposition fee at the end of the lease (52%). Even fewer respondents understood some of the subtleties of leasing; only two out of five knew that a capitalized cost reduction is like pre-paid depreciation (42%) and that when leasing you have no risk for unexpected changes in the leased vehicle's value (40%).

Table 1. Disclosures Received, Understanding of Terms, and Results of "Quiz" on Leasing

	Received disclosure (exposure) %	Know general meaning (attention) %	Correct answer on "quiz" (compre-hension) %
Amount due at lease signing or delivery	97.4		
Capitalized cost reduction		38.8	
When you lease, you may not have to make a down payment			67.4
The capitalized cost reduction is like pre-paid depreciation			42.2
Amount of the monthly payment	100.0		
Difference between lease and loan payments		85.3	
Monthly lease payments are usually lower than loan payments for the same vehicle			73.9
Amount of any other charges	83.8		
Acquisition fees		61.7	
Mileage limits on the lease	97.4		
Mileage allowance		93.1	
There are mileage limits on most leases			98.3
Charge for mileage over the limit	90.6		
It's generally less expensive to get a lease with a higher mileage limit than to pay for extra miles at the end of the lease.			57.4
Number of months or years the leas would last	99.1		
Most leases are for two to four years			82.8
Early termination fees	69.0		
Early termination fee		89.6	
If you end your lease early, the early termination payoff and charges could be several thousand dollars			79.3
Disposition fee		61.7	
If you don't buy the vehicle at the end of the lease, you may have to pay a disposition fee			51.7
Excess wear standards		70.7	
You may face excess wear and tear charges at the end of the lease for dings, dents, faded or stained upholstery, or mismatched tires			86.2
Residual value		74.8	
When you lease, you have no risk from unexpected changes in the resale value			39.7
Total of all payments to be made by the end of the lease	89.7		
Responsibilities for care and maintenance	89.7		
Insurance requirements for the vehicle	87.2		
Purchase option price, if there was one	90.6		
Gross capitalized cost		48.3	
Adjusted capitalized cost		32.2	
Depreciation		93.1	
When you lease, you do not own the vehicle			96.6

Understanding Scores

There were no significant differences in understanding scores between whites and minorities, by age, by marital status, or by the form of the disclosure received. On average, males scored significantly higher than females (38.0 vs. 33.5, respectively). Respondents who completed at least some college scored almost six points higher, on average, than respondents who completed only high school or less (36.9 vs. 31.1). Respondents with household incomes above the median for the sample ($60,000) scored significantly higher than respondents from households with incomes below the median (38.8 vs. 32.1). Leasing experience seemed to make a difference in understanding scores. On average, respondents who were currently leasing scored significantly higher than respondents who had leased previously but were not currently leasing (36.6 vs. 32.6). Respondents who had leased more than once scored significantly high than first-time lessees (38.2 vs. 33.7).

Shopping and information gathering also seemed to influence understanding scores. Respondents who shopped around for leasing information prior to signing a lease scored significantly higher than respondents who had not shopped at all (38.1 vs. 32.3). On average, respondents who used third party sources the most scored six-and-one-half points higher than respondents who used dealer information sources and three-and-one-half points higher than those who used personal sources the most (41.2 vs. 34.7 and 41.2 vs. 37.7, respectively). In addition, respondents who used personal sources the most scored significantly higher than respondents who used dealer sources the most (37.7 vs. 34.7). Thus, even though point-of-sale information sources seem to be the most widely used, these sources do not necessarily lead to the best understanding of the information presented.

Summary and Conclusions

This study provides a "before" snapshot of consumers' understanding of leasing terms and conditions prior to the implementation of new disclosure requirements; by replicating this study in a few more years, policy makers will be better able to assess the impacts of their new information disclosures. However, this current study reveals some issues for today's consumer educators.

The most frequently cited source of information was POS, although consumers who relied on POS information had lower understanding scores than others. Almost all disclosures required in financial transactions (e.g. Truth-in-Lending and Real Estate Settlement Procedures Acts as well as Consumer Leasing Act) are made at the point-of-sale, as opposed to earlier in the shopping-decision making process. One of the reasons regulators rely on point-of-sale disclosures is that everyone will receive them. However, it is evident that if we can encourage consumers to obtain information from others (i.e. earlier in the shopping process), consumers can enter into transactions with more understanding.

One component of obtaining third party information is access to unbiased, research-based information. In an era of web-based information, consumers can find a wealth of information at their fingertips, reducing the costs of information search. However, information needs to be available in multiple formats for all income and education segments (note that lower income and less educated respondents scored lower than their higher income, more highly educated counterparts).

Another finding of this study is the importance of encouraging consumers to shop around. Over one-third (37%) did not shop for leasing information before going into a dealership, and they scored nearly six points lower than their counterparts who did shop. Making information easily available is one component; community-based consumer educators may also want to provide information on the pay-offs to shopping around via simple price surveys..

The results of the comprehension "quiz" provide some good news and some bad news. The good news is that large proportions of respondents knew about some of the key terms and features of vehicle leases. The bad news is that there are substantial proportions of lessees who don't understand several other key features and terms. While some of these "bad news" items are covered by the new leasing disclosures, others are not. Thus, it is likely that there will continue to be a need to educate consumers about the intricacies of leasing that are not part of the Regulation M disclosures.

Finally, these results demonstrate that information disclosures as part of consumer protection regulation can only go so far in helping consumers understand transactions in the financial marketplace. Consumer education and outreach efforts are as important as regulatory efforts in providing consumer protection. Thus, while we wait for the "after" snapshot of consumers' understanding of leasing terms and conditions, there is still plenty of work for consumer educators to do.

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Endnotes

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4 The Consumer Leasing Act defines a consumer lease as a lease of personal property to an individual to be used primarily for personal, family, or household purposes for a period of more than four months and with a total contractual obligation of no more than $25,000.

The analysis and conclusions set for the in this paper are those of the authors and do not necessarily indicate concurrence of the Board of Governors, the Federal Reserve Banks, or members of their staffs.

Determinants of Consumer's Debt Repayment Patterns

Scoring systems have been widely used by creditors to predict consumers' credit risk. However, few empirical studies have examined the validity of the model adopted in many scoring systems. Using the 1995 Survey of Consumer Finances, a multivariate logistic regression analysis revealed that households headed by people who are younger, with a lower annual income, nonwhite, unmarried, with more children, renters, short-term planners, and larger *total debt/total assets* ratio are more likely to have debt payment difficulties.

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Introduction

Since the new bankruptcy law was enacted in 1979 (Luckett, 1988), the number of personal bankruptcy filings has continued to rise sharply. Consumer debt is usually a large part of consumer's total outstanding debt. To cope with losses, some credit issuers have tightened their standards to reduce the potential risk. More credit companies have adopted credit-scoring systems to help evaluate if a credit applicant is qualified to get credit. This is an effective way for creditors to prevent major losses. Although credit-scoring systems are widely used in the credit industry, there are few empirical studies to examine if the mathematical model is valid and effective when being used to predict a person's ability to handle debt. The variables and weight used in the model are decided largely on creditors' experience or common sense without any theoretical support. Therefore, to improve the effectiveness of credit-scoring models, the purpose of this study is to reexamine factors identified in previous research that are related to debt repayment patterns.

Literature Review

How to better predict and evaluate credit risk has drawn much attention from researchers. Studies using the Survey of Consumer Finances (SCF) data have established an excellent foundation. Sullivan and Fisher (1988) examined the relationship between a set of socio-economic variables and consumer's credit risk by using univariate analysis. They found that those with payment difficulties were likely to be aged 45 to 54, with lower levels of education, female, unmarried with children, or renters. Further, the univariate analysis revealed that income and credit risk were only marginally related. Regardless of the level of income, the amount of liquid assets was negatively related with payment difficulties. The ratio of total debt to income was inversely related to debt payment difficulties. The ratios of *consumer debt to income*, *monthly mortgage payment to income*, and *monthly consumer debt payment to income* were positively related to debt payment difficulties. The number of credit cards was inversely related with debt payment difficulties.

Canner and Luckett (1990) pointed out that the univariate approach is unable to fully account for the interrelationships among variables such as income, age and education. Therefore, to more precisely reflect the relationship among the socioeconomic variables, they employed the multivariate technique of logit analysis. They found that some of the variables that were significant in univariate analysis were not significant in a multivariate approach. The important findings of their study were: the credit turndown history was the most significant predictor of debt payment difficulties, family size was positively related with debt payment difficulties; and white people were less likely to have debt payment difficulties than other racial groups. But, in contrast to previous studies, household income, amount of liquid assets, and the ratio of *debt payment to income* were not significant. The authors explained that the rather weak explanatory power of these variables was probably due to the fact that creditors have already done a competent job of accounting for income in the loan approval process.

Canner and Cyrnak (1986) used a multivariate logistic regression to discriminate between convenience users and installment users. The dependent variable was the same as in the studies mentioned above, consumers' repayment patterns. In their model, independent variables included: family income, ratio of monthly debt payment plus monthly rent payments for non-homeowners to monthly income, ratio of liquid assets to family income, education level of household head, age of household head, race, and an interaction term for race and income. More important. Canner and Cyrnak (1986) included the attitudinal variable, which was a sum of positive answers to nine questions about possible reasons for borrowing. The findings of their studies were consistent with previous studies. Income, ratio of *non-credit installment debt and rent payments to income*, ratio of *liquid assets holdings to income*, age and race were significant. The attitudinal variable proved to be one of the most powerful predictors in the model. The more positive attitude toward credit meant that respondents were more likely to be installment users.

Some researchers with psychological backgrounds have also explored the effect of some psychological factors on consumers' payment behaviors. Lea, Webley and Walker (1994) found that debtors were more likely to believe that they had less money than their friends, relatives and people at work, more likely to report missing appointments, more likely to have poor money management skills, and less likely to possess durable goods. However, consumers' attitude toward debt did not differ significantly among consumer groups with different payment patterns, which was in contrast to the results obtained in their previous studies and by some other researchers.

Livingstone and Lunt (1992) in Great Britain used discriminant function analysis to discriminate consumers with personal debt and those who were not in debt. They argued that "discriminant function analysis provides the most parsimonious linear description of the underlying differences between categorical groups". Based on the discriminant analysis, some variables were selected and used in the subsequent multivariate regression analysis. They found that consumers' social class and external locus of control were most powerful in predicting debtors and non-debtors. Contrary to previous studies conducted in the United States, no other socioeconomic variables were significant in their study, such as number of children at home, disposable income, and education.

Although many previous studies have examined the consumer debt problem from different perspectives and with different statistical methods, their findings are not consistent with each other. In addition, no convincing explanation was given for the inconsistency. The actual relationship between consumers' debt payment patterns and those socioeconomic factors are still unknown. In addition, no study has taken into account all of the possible relevant variables simultaneously. Also, some of the previous studies used the SCF data while others collected data. The differences in the samples could be one of the reasons that their findings were not always consistent. Economic and social situations have changed a lot in the US since the 1980s and it can be expected that consumers' attitude, behaviors, and economic conditions may have also changed. Therefore, it is important to reexamine and further investigate this issue with the latest information available from the 1995 SCF data.

The current study differs from previous studies in the following ways. First, consumers' credit history was not included because whether respondents have been turned down or not in the previous years is more the effect of their paying habit instead of the cause of their paying habit. Therefore, it is inappropriate to use respondents' credit history to predict paying habit. Second, consumers' attitude toward credit is measured differently from previous studies. Many previous studies have used the sum of the questions (i.e., a scale) about specific attitudes toward credit, however, no reliability and validity of this scale has been reported. Because of this, only respondents' general attitude toward credit was used in this study.

Finally, when measuring consumers' debt burdens, some previous studies have used total debt, total liquid assets, and total assets. However, consumers' debt burden cannot be fully reflected by just looking at one side of their balance sheet. A higher amount of debt may not necessarily indicate a heavier debt burden because the consumer may have a higher income or larger amount of assets. To more accurately measure consumers' debt burden, both consumers' debt and their financial status should be considered, such as households' net worth and all types of financial ratios. Also, it has been argued that it is inappropriate to look at total debt to yearly income in assessing consumer debt capacity because the individual does not repay total debt within one year (Apilado and Morehart, 1980). Three variables were used to measure respondents' debt burdens: net worth (total assets minus total liabilities), *liquid assets/total debt* ratio, and *total debt/total assets* ratio.

Methodology

Data

The 1995 Survey of Consumer Finances is the most recent national survey data available that provides detailed and complete information about consumers' financial situations in the United States (Kennickell, 1997). It has been widely used by researchers in this area and has proven to be a reliable and efficient way to gather information. The survey included 4,299 households. The data set contains 5 implicates to allow for variance in imputing missing data. To handle the huge data set more easily, only the first implicate was extracted and used for the current study.

Statistical Analysis

Dependent Variable

The dependent variable was consumers' payment patterns according to the answer to the question, "Now thinking of all the various loan or mortgage payments you made during last year, were all the payments made the way they were scheduled, or were payments on any of the loans sometimes made later or missed?". There were three responses: "always pay debt as scheduled", "sometimes got behind or missed payments", and "inappropriate". The dependent variable, respondent's paying habit, was coded as 1 if respondents' answer was "always pay debt as scheduled" and 0 if "sometimes got behind or missed payments". Among the 4299 observations, 1,584 were deleted because the response was "inappropriate". The study was based on the remaining 2,715 households. The descriptive statistics reported in sample description were weighted to represent the population of the United States.

Independent Variables

The independent variables were classified into five categories: demographics, economics, attitudinal, financial management, and debt burden variables. The demographic variables consisted of: education, gender, age, job tenure, race, marital status, homeownership, family size, and number of children in the household. Economic variables included family's annual income and if the respondents were regularly paid or not. Debt burden variables included the ratio of *monthly debt payment to income*, the ratio of *liquid assets to total debt*, the ratio of *total debt to total assets*, and net worth. Attitudinal variables included respondents' general attitude toward credit as measured by their answer to the question, " In general, do you think it is a good idea or a bad idea for people to buy things on the installment plan?" A positive attitude was defined if the response was "a good idea". A neutral attitude was defined if the answer was "good in some ways and bad in some ways" and a negative attitude was defined if the answer was "a bad idea". Two variables were selected to measure respondents' financial management: (a) "In planning your saving and spending, which of the time periods listed on this page is most important to you?" and (b) "Do you usually have a good idea of what your next year's income will be?". See Table 1 for the coding of variables.

A correlation analysis showed that family size was highly correlated with both the number of children in the household and the marital status of the household head. Therefore, family size was dropped from the model. In addition, the gender and marital status of the household head were highly correlated and the gender variable was dropped. For households with married couples, the male was always defined as the household head.

First, t-tests and chi-square tests were conducted for all continuous and categorical variables respectively to give a preliminary analysis of the data. Then, a multivariate logistic regression analysis was used in this study to further explore the relationship between consumers' repayment patterns and a set of socioeconomic, attitudinal, and financial management factors simultaneously. "Logit analysis considers the influence of a number of explanatory variables simultaneously, and generates mathematical coefficients that reflect the separate impact of each given variable, holding the values of the other variables constant" (Canner and Luckett, 1990).

Sample Description

About 75.4% reported that they always paid their debt as scheduled while 24.6% reported that they missed some payments or paid their debt late in the past few years. On average, household heads were 44.4 years old and had completed 13.35 years of education. There was less than one child per household. The average job tenure was 7.6 years. About 8.6% of households had a yearly income above $100,000. Seventy nine percent of the households were headed by white people and 62.8% of household heads were married. Sixty seven percent of households were homeowners. Only 4.2% of household heads were regularly paid, which is smaller than expected. About one-third of household heads held a negative, neutral, or a positive attitude toward credit, respectively. Seventy-two percent of household heads were usually able to predict next year's income. The median net worth for all households was $67,595. The average for the *total debt/toal assets* ratio was 0.45 while the median was 0.33. The average for the *liquid assets/total debt* ratio was 665.04 while the median was 0.05. The large gap between the mean and median of those financial figures reflects the unevenly distributed wealth in the sample.

Results of Preliminary Tests

Before doing the logistic regression analysis, the sample was divided into two groups, respondents with good and poor paying habits. T-tests and Chi-square tests were conducted for continuous and categorical variables, respectively, to examine if the variable selection and classification are successful. On-time payers had a longer job tenure, smaller number of children in the household, larger amount of net worth, larger *liquid assets/total debt* ratio, and smaller *total debt/total assets* ratio. Chi-square analysis revealed that the two groups significantly differed in their age, education level, race, marital status, homeownership, income, whether regularly paid, plan for saving and spending, and the ability to predict next year's income.

Table 1. Coding of Variables for Logistic Regression Model.

Variables	Coding Scheme	
Dependent Variable		
Debt payment pattern	1=always pay debt as scheduled	0=otherwise
Independent Variables		
Demographic Variables		
Age		
< 35 years	1=yes	0=otherwise
35 - 44 years	1=yes	0=otherwise
45 - 54 years	1=yes	0=otherwise
> 54 (reference)		
Education level		
below high school	1=yes	0=otherwise
high school diploma	1=yes	0=otherwise
some college	1=yes	0=otherwise
bachelor degree	1=yes	0=otherwise
graduate school (reference)		
Race	1=white	0=otherwise
Marital status	1=married	0=otherwise
Number of children	continuous	
Homeownership	1=home owner	0=otherwise
Job tenure	continuous	
Economic Variables		
Income		
< $ 25000	1=yes	0=otherwise
$25000 - $50000	1=yes	0=otherwise
$50000 - $75000	1=yes	0=otherwise
$75000 - $100000	1=yes	0=otherwise
>$100000 (reference)		
Regular pay	1=paid regularly	0=otherwise
Attitudinal Variables		
General attitude toward credit		
positive attitude	1=yes	0=otherwise
neutural	1=yes	0=otherwise
negative (reference)		
Money Management		
Plan for saving & spending		
next few months	1=yes	0=otherwise
next year	1=yes	0=otherwise
next few years	1=yes	0=otherwise
next 5 - 10 years	1=yes	0=otherwise
longer than 10 years (reference)		
Usually predict next year's income	1=can predict	0=otherwise
Debt Burden		
Net worth	continuous	
Liquid assets/total debt	continuous	
Total debt/total assets	continuous	

Results of Logistic Regression

As the dependent variable, "respondents' paying habit", is coded as a dummy variable, it is appropriate to use the multivariate logistic regression for the analysis. The results are presented in Table 2.

The findings of the logistic regression can be summarized as follows. When controlling all the other variables, compared with households headed by someone 55 and over, households headed by people younger than 35, 35 to 44, and 45 to 54 are 34.5%, 35.3% and 36.3%, respectively, less likely to pay their debt on time. Households headed by white people are 69.7% more likely to pay their debt on time when compared with non-white households. Households headed by married people are 61.4% more likely to pay their debt on time in comparison to households headed by a non-married person. When the number of children in the household increases by 1, the probability of paying debt on time will decrease by 21.7%. Compared with renters, households owning their houses are 84.9% more likely to pay their debt on time. Compared with households with more than $100,000 yearly income, households with a yearly income less than $25,000, $25,000 to $50,000, $50,000 to $75,000, and $75,000 to $100,000 are 77.5% , 74.6%, 68.3% and 65%, respectively, less likely to pay their debt on time. Long-term planning had an important effect on paying debts on time although there was not a linear effect between planning and the amount of time specified. When compared to households planning for saving and spending for 10 years, all other groups were less likely to pay on time. When the *total debt to total assets* ratio of a household increases by 1, the probability of paying debt on time will decrease by 21.9%. In addition, it is also worth mentioning that the variable measuring if respondents' ability to predict next year's income was almost significant with a P-Value of 0.0526. With a lower confidence level, households who can usually predict next year's income are 26.2% more likely to pay their debt on time.

Table 2. Results of Logistic Regression. (N=2715).

Variables	Parameter Estimate	P-Value		Odds Ratio
Age1(<35)	-0.4230	0.0296	*	0.655
Age2(35-44)	-0.4361	0.0268	*	0.647
Age3(45-54)	-0.4514	0.0154	*	0.637
Reference (>54))				
Edu1 (below high school)	-0.1333	0.5781		0.875
Edu2 (high school diploma)	-0.1093	0.5796		0.896
Edu3 (some college)	-0.0615	0.7560		0.940
Edu4 (bachelor degree)	0.2322	0.2678		1.261
Reference (graduate school)				
White	0.5286	0.0001	***	1.697
Marital Status	0.4789	0.0002	**	1.614
No. of Children	-0.2451	0.0001	***	0.783
Homeowner	0.6148	0.0001	***	1.849
Job Tenure	0.0044	0.5269		0.996
Income1(<$25,000)	-1.4934	0.0001	***	0.225
Income2($25,000-$50,000)	-1.3721	0.0001	***	0.254
Income3($50,000-$75,000)	-1.1487	0.0001	***	0.317
Income4($75,000-$100,000)	-1.0488	0.0006	**	0.350
Reference (>$100,000)				
Pay Regularly	0.3705	0.1554		1.448
Credatt1 (positive attitude)	0.1486	0.2860		1.160
Credatt2 (neutural attitude)	0.0146	0.9153		1.015
Reference (negative attitude)				
SavingPlan1(next frew months)	-0.6297	0.0022	*	0.533
SavingPlan2(next year)	-0.4515	0.0289	*	0.637
SavingPlan3(next few years)	-0.5835	0.0048	*	0.558
SavingPlan4(next 5-10 years)	-0.0454	0.8097		0.956
Reference (longer than 10 years)				
Predict Income	0.2328	0.0526		1.262
Net worth	0.0000	0.2542		1.000
LiquidAssets/Debt	0.0000	0.3652		1.000
Debt/Assets	-0.2468	0.0069	*	0.781
Intercept	2.2473			

* P<0.05 ** P<0.01 *** P<0.001

Discussion and Conclusions

Consistent with the hypotheses, households headed by people who were younger, had a lower annual income, nonwhite, unmarried, have more children, renters, short-term planners, had a larger *total debt/total assets* ratio were more likely to have debt payment difficulties. However, several hypotheses were not supported by the findings. Respondents' attitude toward credit, education level, job tenure, whether people were paid regularly or not, net worth, and *liquid assets to total debt* ratio were not significant in this study. It is not surprising to find that consumers' attitude toward credit was not significant as this variable was not significant in the chi-square test. The attitudinal variables in studies using the SCF data have not been significant. They were reported significant only in the studies done by Lea, Webley and Walker (1995) and Livingstone and Lunt (1992), where self-developed scales were used to measure consumers' attitude toward credit. Therefore, it can be argued that the reliability and validity of the scale measuring respondents' credit attitude in the SCF is in question and one should be cautious in drawing a conclusion about this variable. Further analysis is needed to examine the reliability and validity of this scale.

Among all the variables measuring respondents' debt burdens, *the total debt/total assets* ratio turned out to be the best predictor in this study. However, respondents' *monthly debt payment to monthly income* ratio was not included in this study due to the relatively large amount of missing data. Although it has been recommended as a good predictor theoretically, it was not significant in the study done by Canner and Luckett (1990), where the 1983 SCF data was used. The way they calculated the *debt payment to income* ratio was not disclosed in their paper. Therefore, it is hard to say whether the non-significance is due to calculation errors or some other reasons. It may be useful to reexamine this model with other data sets. Canner and Luckett (1990) found that liquid assets/total debt was significant, a variable that was not in the current study. In addition, the only significant variable in this study

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that measured respondents' debt burden, the *total debt/total assets* ratio, was not included in Canner and Luckett's model. Therefore, it was hard to compare the results of their research with the current study.

Implications

The findings of this study provide some implications for credit issuers. First, this study has given empirical evidence about which factors can significantly influence consumers' paying habit. Consumers' age, household income, race, marital status, number of children in the households, homeownership, the length of time planning for saving and spending, the ability to predict next year's income, and the total debt/total assets of households were the most important factors according to this study. Therefore, creditors can improve the predicting power of the model used in their credit scoring systems by deleting some irrelevant factors and adding some more important factors. In addition, according to the significance level of each factor, creditors can adjust the weight given to each factor in their credit scoring system. A well-designed scoring system will obviously make credit evaluation more efficient, reliable, and accurate. It will ultimately help reduce credit risk and at the same time increase profit by being able to select the best customers. However, consumers' paying habit is a very complicated issue. Besides the factors studied in the current studies, Lea, Webley and Walker (1995) have shown that some psychological factors can also influence consumers' paying habit. However, for creditors, some information, such as consumers' planning for saving and spending, ability to predict next year's income, and consumers' psychological characteristics, are not readily available and they are difficult to measure and collect. Therefore, there is still some gap between empirical studies and the practices in the real life.

Limitations

The sample size in this study was 2,715. Therefore, one should be cautious to generalize the conclusions drawn from this study to the general population. The variables selected in the model are restricted by the information provided by the data set. Although some previous studies have revealed that psychological factors were also important determinants of consumers' repayment patterns, the information was not available in the data set. Also, race of household heads is an important factor in predicting consumers' paying habit. A simple comparison between white people and all other minority groups is not enough. It would be helpful if the SCF could oversample minority households in the future so that more valuable information about minority groups can be available to researchers. Moreover, consumers' residence tenure is widely used in credit scoring systems as an important factor to predict consumers' credit risk and previous studies have found it has a significant influence on consumers' paying patterns. However, this information is not available in the SCF data. Because of all the limitations mentioned above, future study is needed to reexamine the findings of this study by including more explanatory variables.

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Endnotes

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Do Consumers Know the Price of Credit? A Comparison of Consumers' Knowledge of Open- and Closed-end Credit

Consumers' understanding of the prices of open- and close-end credit was examined using data from 1997 Surveys of Consumers. Less than ten percent of mortgage borrowers correctly understood the price of closed-end credit, while 46 percent of credit card holders correctly understood the price of open-end credit. Age and information search were found to be associated with knowledge of open-end credit, while education, information search, and region were associated with knowledge of closed-end credit.

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Perhaps one of the great disappointments for consumer organizations and policy makers over the last three decades has been the slowness with which consumers have made use of the disclosed information they are given about the relative costs of credit (National Consumer Council 1990). When the annual percentage rate (APR) was first introduced under Truth in Lending Act in 1968, very few people understood it. However, consumers' awareness of APR has improved (Day and Brandt, 1974; Durkin and Elliehausen 1978; Shay and Schober 1973). The question remains: does increased awareness lead consumers to know and understand the price of credit?

Both the contract interest rate and the APR indicate the price of credit, but the relationship between the contract interest rate and the APR varies between open- and closed-end credit. Open-end credit establishes a limit or a line of credit, such as credit card plans and home-secured credit lines. Closed-end credit is for a fixed amount of money payable over a fixed period of time, such as home mortgage loans. For open-end credit, the APR is equivalent to the contract interest rate, but for closed-end credit, the APR incorporates other fees and costs in addition to the contract interest rate. There have been serious doubts about how effectively these measures of the price of credit have been understood and utilized by consumers (Kinsey and McAlister 1981; National Consumer Council 1990; Raynard and Craig 1993). Therefore, the purpose of this research is to investigate consumers' understanding of the price of open- and closed-end credit and to determine what factors influence consumers' understanding, with an eye toward consumer education and public policy needs.

Literature Review

Knowledge of the Price of Credit

Mandell (1973) investigated consumer's knowledge and understanding of credit and credit markets based on a nationwide study conducted in 1971 by the Survey Research Center. He found that consumers could generally rank lenders correctly in terms of cost, but they were not aware of current interest rates being charged in the marketplace. He also found that knowledge and understanding of the credit market was closely related to income and education of the family. Using a 1977 survey of 1,330 Minnesota households, Kinsey and McAlister (1981) reported that few respondents had knowledge of the APR for open-end credit or knowledge of the actual dollar finance charge. They also supported Mandell's (1973) findings on the impact of income and education on consumers' understanding of APR.

White and Barclay (1981) asked 250 Colorado homebuyers to indicate problems encountered during search, purchase, and first year of occupancy, and found that lack of knowledge of home financing was one of the major concerns faced by home buyers. Twenty percent of first-time buyers cited a lack of financial knowledge as the most important problem, while twelve percent of repeat buyers acknowledged these problems.

There is a general consensus that consumers' lack of understanding is a problem in credit markets (Chang and Hanna 1992; Kinsey and McAlister 1981; Mandell 1973; Thakor, Beltz and Barefoot 1993). White and Barclay (1981) and Chang and Hanna (1992) argued that this lack of understanding stems from the complexity of financial information and the language of creditors, and Kimball, Frisch and Gregor (1997) additionally pointed out the proliferation of credit product choices.

Search and Consumer's Ability to Understand

Previous researchers indicated that a positive relationship exists between the overall amount of information search undertaken and consumer decision efficiency. Sproles, Geistfeld, and Badenhop (1978) provided empirical evidence that information search improves consumers' abilities to evaluate product quality. In order to enhance consumers' decision making ability, information obtained should be useful, unbiased, accurate, easy to understand, and affordable (Bloom 1989).

Both the quality and quantity of information influence the understandability of information (Keller and Staelin 1987). If the information obtained is too complex, information search may not enhance consumer's ability to understand (Mazis and Staelin 1981). Russo (1988) posited that both the understandability of information provided and consumer's cognitive ability influence consumer's ability to understand information. Consumer's cognitive ability determines their ability to comprehend complex information (Alba and Hutchinson 1987; Johnson and Russo 1984; Russo 1988). Previous knowledge and experience also facilitate the learning of new information, while consumers without such knowledge and experience do not have the memory structure to evaluate and interpret the information.

On the other hand, a variety of different information sources provide different characteristics of information, and thus a different quality of information (Beales et al. 1981). Some sources provide more useful information than others, while some sources of information are less costly than others. Capon and Lutz (1979) grouped information sources into consumer-oriented personal, commercial seller, and independent third party.

These studies indicate concerns about consumers' lack of understanding in credit markets and suggest that consumers' understanding of credit information varies according to their income, education, and experience as well as the quantity and quality of information obtained through search. In this study consumers' understanding of the price of open- and closed-end credits is examined, and the impacts of income, education, experience, and the quantity and quality of information on consumers' understanding are investigated.

Methodology

Data

The Surveys of Consumers were initiated in the late 1940s by the Survey Research Center at the University of Michigan. The purpose of these surveys is to measure changes in consumer attitudes and expectations and to evaluate how these changes relate to consumer decisions to save, borrow, or make discretionary purchases. In February and March 1997, the Federal Reserve Board commissioned additional questions, including specific questions on consumers' knowledge of the price of credit. For these surveys 1,001 households were interviewed by telephone.

Variables

Understanding the Price of Open- and Closed-End Credit. The respondent's knowledge of the price of open- and closed-end credit was the dependent variables for this study. Households who had applied for a general purpose credit card, such as a Visa or MasterCard, during the past five years were asked the following question: "When a credit card is described as having an 18.9 percent APR - that is, an 18.9 annual percentage rate - does that mean that the interest rate is actually 18.9 percent, or would the interest rate be higher than 18.9 percent or lower than 18.9 percent?" Similarly, the respondents who had applied for a mortgage to buy or build a home were asked about the price of home mortgage loan, and the respondents who refinanced within past five year period were asked about the price of home equity loan. The responses were categorized into (1) the interest rate is equivalent to the APR; (2) the interest rate is higher than the APR; (3) the interest rate is lower than the APR, and (4) don't know. The correct responses for the open and closed-end credit were (1) and (3), respectively. The validity of this measure of consumer knowledge is examined and reported in Lee and Hogarth (1999).

Income. The natural logarithm of the total annual family income in 1996 was employed. The natural logarithm of income was used in order to reduce heteroskedasticity (unequal variance of the disturbances).

Education. In order to capture a potential non-linear effects of education, a set of dummy variables (some college, bachelor's degree, and graduate education) were included as explanatory variables with high school graduates or less education as the base.

Experience. For closed-end credit, refinancing experience is employed as a proxy to indicate consumer's experience (refinanced = 1 and did not refinance = 0). For open-end credit, there was no information that indicates respondents' previous experience in open-end credit market.

Quantity and Quality of Information Search. As consumers search more extensively, they are expected to learn more about credit products (Chang and Hanna 1992). Thus, it is hypothesized that those who search more are more knowledgeable about the price of credit. The quantity of search was determined in this study based on the following three variables: (1) the number of lenders contacted, (2) the number of terms considered, and (3) the number of information sources consulted. Rather than including these directly in the regression, factor analysis was employed in order to identify the underlying factor of the above three variables, and the factor score was used as the independent variable. The sources of information used are employed as proxies for the quality of information obtained. Previous work grouped sources of information into personal, seller, and third party (Capon and Lutz 1979), so three dummy variables were included to indicate whether or not a respondent obtained information from personal sources, sellers, and/or third parties.

Demographics. The following demographic variables were included to examine the potential impacts of these variables on consumers' knowledge of the price of credit: (1) Age: the respondent's age was employed as a continuous variable; (2) Marital status: included as a binary variable (married = 1, unmarried = 0). (3) Race-ethnicity: included as a binary variable (Hispanics and non-Whites = 1, non-Hispanic Whites = 0). (4) Gender: included as a binary variable (female = 1, male = 0). (5) Household size: a set of dummy variables were included: HH1 (single household), HH3 (3 person household), and HH4 (4 or more person household) with a two person household as the base. (6) Region: A set of dummies, West, Midwest, and Northeast, were included with South as the base.

Analysis

After using descriptive statistics to examine whether consumers correctly understood the prices of open- and closed- end credit, factor analyses were performed to identify the underlying factors related to the extent of information search. Maximum likelihood methods were employed, since maximum likelihood estimation has desirable asymptotic properties and does not require a multivariate normal distribution. The factor score was then used as an independent variable representing the quantity of information search. Finally, two separate logistic analyses were performed to investigate the factors that influence consumers' understanding of open- and closed-end credit.

Results

Sample

In this sample, 484 respondents applied for a credit card, while 131 respondents applied for a home mortgage, and 88 respondents refinanced their existing home mortgages during the past five year period. Among the open-credit holders, 45.6 percent correctly understood the price of open-end credit, while less than 10 percent of the closed-credit holders correctly understood the price of closed-end credit as expressed by the APR. We considered the cases where consumers in the sample held both open- and closed-end credit products. Naturally, it would be interesting to know if consumers consistently understood or misunderstood the APR price measure. Unfortunately, the sample size was too small (n=143) to do any rigorous analysis. Descriptively, however, only 1.92 percent of consumers understood the APR measure for both open- and closed-end credit, while 55.94 percent did not understand the price of open- nor closed-end credit. There is little transitivity between understanding one type of credit to another.

Factor Analyses

For open-end credit, one underlying factor was found with eigenvalue of 1.7409 (the eigenvalue of the second factor was -0.1166). The chi-square statistic for testing that at least one common factor existed was 269.44 with p-value of .0001. The squared canonical correlation of the variables with the factor was 0.7491. For closed-end credit, one underlying factor was identified with eigenvalue of 2.2905 (the eigenvalue of the second factor was -

0.1524). The chi-square statistic for testing that one common factor existed was 165.16 with p-value of .0001. The squared canonical correlation was 0.7932.

Logistic Analyses

The results of logistic analyses are presented in Table 1. Seller-provided information and age were found to significantly influence credit card holders' understanding of APR as the price of open-end credit, while education, the extent of information search (factor score), seller-provided information, and region were found to be significantly associated with mortgage holders' understanding of the APR as the price of closed-end credit. The log likelihood ratios are significant, indicating that consumers' knowledge of the price of open- and closed-end credit was well estimated by this set of independent variables.

More specifically, regarding consumers' understanding of the price of open-end credit, education and income were not found to be significant, failing to support Mandell (1973) and Kinsey and McAlister (1981)'s studies. One possible bias that contributes to this result is that we were not able to control for consumers' use patterns with credit cards. If consumers are convenience users rather than revolvers, they are less likely to be concerned with the relevant price of the APR or the contract interest rate (Lee and Hogarth 1998). Therefore, before drawing a conclusion on the impact of education and income on consumers' knowledge of the price of open-end credit, additional studies need to be done, controlling for the way in which consumers use their credit cards. While the quantity of information search was not found to be associated with consumers' understanding of the price of open-end credit, the sources from which consumers obtained information were found to influence their understanding of the APR. Among information sources, only seller-provided information was positively associated with consumers'

Table 1
Results of Logistic Analyses: Parameter Estimates (P-value).

Source	Open-End (n=454)	Closed-End (n=209)
Intercept	1.5741 (0.3287)	-2.6031 (0.5101)
Information Search		
Extent	-0.1172 (0.4377)	-1.8385 (0.0266)
Source		
Family	0.1756 (0.4991)	0.8086 (0.2841)
Seller	0.6485 (0.0293)	2.5947 (0.0295)
Third party	-0.1834 (0.5408)	1.4255 (0.0850)
Refinancer	NA	-0.6093 (0.3145)
Log of income	-0.1321 (0.3841)	-0.7067 (0.1617)
Age	-0.0266 (0.0007)	0.0366 (0.1614)
Education (High school graduate or less as base)		
Some college	0.0885 (0.7371)	0.1975 (0.8300)
B.S.	-0.3732 (0.1654)	-0.2594 (0.7830)
Graduate education	0.1476 (0.6292)	2.1209 (0.0210)
Married (Unmarried as base)	0.1711 (0.5040)	2.3495 (0.0633)
Nonwhite (Non-Hispanic White as base)	-0.1074 (0.6641)	-0.2615 (0.7283)
Female (Male as base)	0.2243 (0.2608)	-0.5489 (0.3675)
Household size (two people household as base)		
Single household	-0.1881 (0.5849)	1.1833 (0.4121)
Three people household	0.1988 (0.4706)	0.5014 (0.4920)
Four or more people household	-0.0800 (0.7531)	-1.3817 (0.0947)
Region (South as base)		
West	0.0443 (0.8676)	1.9087 (0.0449)
Midwest	0.2841 (0.2732)	2.7302 (0.0047)
Northeast	-0.1283 (0.6505)	1.7876 (0.1049)
-2 Log Likelihood	31.608 (0.0245)	36.306 (0.0097)
degree of freedom	18	19

understanding. Sellers play a positive role in helping consumers understand the price of open-end credit. Interestingly, the most influential factor on consumers' understanding of the price of open-end credit was age. The older the respondent was, the less likely s/he was to understand the price of open-end credit. Since older consumers tend to have a negative attitude toward using credit cards, their lack of knowledge may be less of a problem in credit card markets. However, with a greater availability of home equity lines of credit and an increasing number of older consumers who are considering this credit product, their lack of understanding of the APR price of open-end credit can be potentially disastrous.

For closed-end credit, education was found to influence consumers' understanding of its price, while income was not found to be significant. Specifically, those who had graduate education were more likely to understand the APR price of closed-end credit than those who were high school graduates or less. It is worth noting that the college education variable was not found to be significant. The negative impact of the extent of information search on consumers' understanding further suggests that the more consumers engage in search, the more they get confused. However, we cannot rule out the possibility that some borrowers with poor credit histories might have engaged in extensive information search, and it is the effects of credit history, not search that we are capturing. The data did not provide any information about the respondent's credit history, thus it could not be controlled in the analysis. Again, before drawing a conclusion on the impact of the extent of information search, further analysis needs to be done controlling the impact of credit worthiness. Consistent with the results on open-end credit, seller-provided information was found to significantly influence consumers' understanding of the APR price of closed-end credit. In addition, third party provided information was marginally associated with consumers' knowledge, indicating its positive role in consumer education. Married couples and those living in two people households were more likely to understand the price of closed-end credit than unmarried and those living in four or more people households, respectively. Residents of South were less likely to understand the APR price of closed-end credit than the residents of other regions.

Conclusions and Implications

Consumers' understanding of the APR price of open- and closed-end credit was examined in this study, using data from the February and March, 1997 University of Michigan's Survey of Consumers. Less than ten percent of mortgage borrowers and refinancers understood the price of closed-end credit, while 46 percent of credit card holders understood the price of open-end credit as given by the APR. This study provides empirical evidence regarding consumers' confusion with the APR price of open- and closed-end credit. Currently provided information under the Truth in Lending Act may not be particularly helpful in consumer's shopping and decision making among credit products. The problem is particularly severe in closed-end credit markets. Considering that less than 10 percent of mortgage borrowers could understand the APR price of a closed-end loan, we conclude that for a majority of consumers APR price information is not understandable. Therefore, for many consumers, comparison shopping for APR price may not help them make optimal decisions.

Given this conclusion, public policy makers may want to consider more effective way to disclose the price information at the shopping stage for consumers. Several previous researchers (Durkin 1981; Kinsey and McAlister 1981; Raynard and Craig 1993) repeatedly pointed out that consumers tend to understand the dollar figures for total interest charge better than the APR. Converting percentages into dollars (e.g. dollars per thousand of loan) may be a more meaningful tool for helping consumers understand the price of credit. If the current APR disclosure is retained, then it would be helpful to compare the contract interest rate and the APR specifically, using an example, in order to enhance consumers' understanding.

There is a need for consumer education across the board but most especially for consumers who are older and less well educated. Considering that age is particularly strongly associated with consumers' knowledge of the price of open-end credit, educational efforts on open-end credit, especially home equity lines of credit, will greatly benefit older consumers. The finding that even college education did not make a difference in understanding the APR price of closed-end credit suggests that personal finance education, specifically with respect to closed-end loans, is important for both high schools and colleges to provide for their students. In addition, since some subgroups (e.g. minority household, females) in this survey did not understand the price of credit correctly, consumer education programs tailored for targeted audiences should have high marginal benefits.

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The analysis and conclusions set forth in this paper are those of the authors and do not necessarily indicate concurrence of the Board of Governors, the Federal Reserve Banks, or members of their staffs.

Determinants of Planned Retirement Age

Determinants of planned retirement age are analyzed to identify workers most likely to be affected by proposed increases in the age of eligibility for full Social Security retirement benefits. The prediction equation indicates that defined benefit pension ownership, employment in less-skilled occupations, lower levels of education, being Black or Hispanic, and higher levels of financial assets, nonfinancial assets, and other private pension funds are related to lower planned retirement age.

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Introduction

Elderly persons are increasing as a proportion of the population. The percent of the U.S. population made up of persons 65 years of age and over is 15% today, and is projected to increase to 20% over the next 30 years (U.S. Bureau of the Census, 1998). The demographic pressures of population aging will require forward-looking action from policy makers to preserve the financial viability of the Social Security program. One proposed change is to raise the age of eligibility for full retirement benefits further or more rapidly than the currently planned gradual increase from 65 to 67 over the next 25 years. The rationale for increasing retirement age is to reduce the long-term deficit in the Social Security Trust Fund by increasing the amount that individuals pay into the Trust Fund, and reducing the benefits they draw out. The primary justifications for the recommendation are longer life expectancy and improved health of the nation=s elderly. Raising the retirement age has implications for the financial solvency of the Social Security System, supply and demand in the labor market, and the economic well-being of individuals.

Previous research documents that a worker=s decision to retire is influenced by rules governing pensions and Social Security benefits, wealth, characteristics of jobs held by elderly workers, health insurance coverage, and social norms (Fields & Mitchell, 1984; Hurd, 1997). Social norms regarding Aacceptable@ retirement age have been changing. The passage of the Social Security Act of 1935 made persons eligible for retirement benefits at age 65. Subsequent legislation passed in 1956 and 1962 made retirement benefits available at age 62 for women and men, respectively. In 1978, mandatory retirement before age 70 was abolished, and mandatory retirement at any age was outlawed in 1986.

These legislative changes affecting retirement age were accompanied by a century long decline in male labor force participation rates at older ages, a decline that has leveled off since the mid 1980s. However, labor force participation among men 55 to 64 years of age tends to be part-time or in a different occupation following Aretirement.@ Rather than completely withdrawing from the labor force, many men leave long-term career jobs but continue to work often part-time or part-year. The term Abridge jobs@ has been coined to refer to these employment choices between full-time careers and complete retirement. Whether the leveling off in male labor force participation rates since 1985 represents a short term cyclical event or a new long term pattern remains a question. However, it is clear that men=s hours of work at older ages are still falling even if the percent of older men that participate in the labor force are not (Wiatrowski, 1993).

The focus of this research is to investigate the determinants of Aplanned@ retirement age. Planned retirement age is a crucial component of family financial planning. However, few studies have addressed this issue directly. Many previous studies on retirement behavior have focused on the observed retirement age of older workers instead of planned retirement age. Planned retirement age is a crucial issue both for financial planning for retirement by individuals and for public policy debates about Social Security reform and related issues. Even though an individual=s planned retirement age might change over time, the planned retirement age of pre retirees is a critical factor affecting saving and investment decisions during the working years.

The number of years until the planned retirement age typically serves as an Ainvestment horizon@ for retirement saving planning for pre retirees. The investment horizon influences both the choice of investment vehicles and the amount of savings needed to finance consumption during the retirement years. An individual facing a relatively longer investment horizon would be more likely to buy stocks and other more aggressive investment vehicles, while an individual much closer to retirement would choose more conservative, lower risk investment vehicles. Similarly, an individual who plans to retire at a younger age (thus receiving less than the maximum retirement benefit) and spend relatively more years in retirement will have a higher personal savings target than an individual who plans to retire at a later age.

Some recent studies (Mitchell & Moore, 1997; Bernheim, 1996) evaluating retirement wealth adequacy of pre retirees have assumed age 65 as the retirement age. Although age 65 is the age of eligibility for full retirement benefits under the Social Security

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program today, the full retirement age is scheduled to gradually increase to age 67. The standardized assumption of retirement at 65 without allowing for individual differences might significantly overestimate or underestimate the adequacy of retirement wealth. Clearly, assumptions made about planned retirement age are critical in determining whether people have saved =enough= for retirement. Yuh, Montalto and Hanna (1998) found that planned retirement age has a substantial impact on the estimated adequacy of preparation for retirement. Even though about 75% of workers elect to retire before age 65, there are proposals to increase the minimum age to receive any Social Security retirement pension (Apfel, 1998). Therefore, it is worthwhile to study factors related to expected retirement age to see which types of workers would be impacted most by increases in the minimum age for receiving Social Security benefits. Additionally, planned retirement age is an important variable in developing rational savings plans for retirement, so improving understanding of planned retirement age has implications for financial planning. This study analyzes factors related to individuals= planned retirement ages.

Literature Review

There have been many studies on retirement issues since the 1970=s, but most of these studies have focused on retirement behavior of older workers, and the observed retirement age, rather than on the planned retirement age of pre retirees. Typically, actual retirement has been treated as a choice variable in the literature, and various economic factors have been shown to play an important role in the retirement decision.

Boskin (1977) tried to explain the long-term decline in the labor-force participation of all male age-groups. Using data from the Panel Study of Income Dynamics for 1968 through 1972, he found that the value of current annual Social Security retirement benefits had a pronounced effect on the decision to retire. The level of net earnings had a strong negative effect on the probability of retirement. Quinn (1977) examined the microeconomic determinants of early retirement among white married men aged 58-63 using the 1969 Retirement History Study. Quinn investigated the relative impact of three sets of factors in explaining older men=s labor-force participation decisions: personal and financial characteristics, local labor market conditions, and certain attributes of the individual=s job. He found that health status and current eligibility for Social Security and other pensions were the most important determinants of retirement, and that there was a definite interaction between the two -- persons in poor health were more likely to retire in response to financial incentives from Social Security and other private pensions.

Diamond and Hausman (1984) examined factors that affect the actual retirement decision using the National Longitudinal Survey of Mature Men. The presence of pensions and Social Security benefits, the level of permanent income, and poor health had strong, positive effects on the probability of retirement. They argued that planned retirement dates change over time. In fact, while planned retirement age had some predictive power for actual retirement age, it left much variance unexplained. Burtless and Moffitt (1985) developed and estimated a model of the joint choice of retirement age and post retirement hours of work by the aged population using data from the Longitudinal Retirement History Survey (LRHS). They found that Social Security influenced both retirement age and choice of post retirement hours of work, but the magnitude of the effect on the age of retirement was small. They also found that earlier retirement age was related to poor health, lower levels of education, and higher pre retirement wage rates. Burtless (1986) also developed a retirement age model and estimated the model using the Longitudinal Retirement History Survey. Poor health, being married, household size, and wealth in excess of $25,000 all reduced the age of retirement.

Kotlikoff (1979) estimated a model for expected age of retirement using data from the National Longitudinal Survey (NLS) of Older Men. Private pension coverage was an important predictor of expected retirement age. Coverage under a private pension plan was associated with expected retirement 1.2 years earlier, for government pension coverage the impact was 1.8 years. Age had a positive and significant effect, and the health and employment attitudinal variables all had the anticipated negative effects. Honig (1996) used data from the first wave of the Health and Retirement Survey and found evidence that expected and observed retirement functions are similar. Honig (1996) suggests that retirement expectations may accurately forecast retirement behavior.

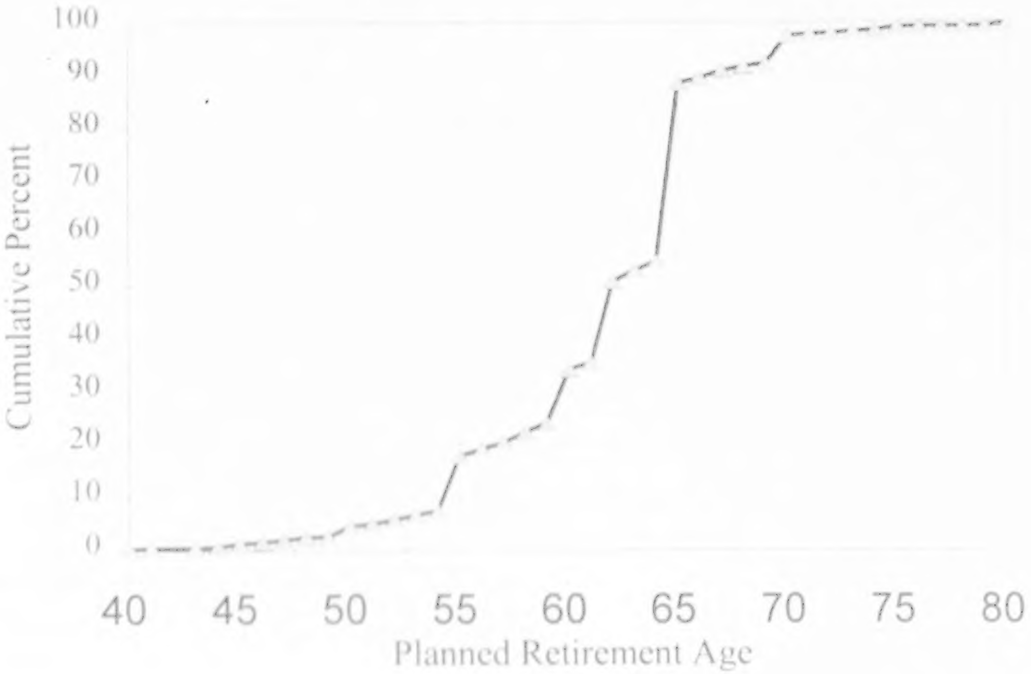
Most of the previous research focuses on the observed retirement age using a work-leisure model or a life cycle labor supply model. Typically, data on actual retirement behavior is used to estimate the probability of being retired as a function of Social Security and pension benefits, and other demographic characteristics. In addition, most of the economic retirement research conducted since the late 1970=s has used data from the RHS. A major limitation of the RHS is its minimal information about private pension plans for the RHS respondents (Leonesio, 1996).

A definition of retirement is required before the determinants of planned retirement age can be analyzed, however, there is no consensus in the literature on the definition of retirement (Gustman, Mitchell, & Steinmeier, 1995). Various definitions of retirement have been used by economists and other social scientists, including: self-reported retirement, completely stop working or looking for work, stop working full-time, working less than a given number of hours, leaving the main employer (a long-term job), and receipt of an employer-provided pension or Social Security benefits. This study defines retirement as occurring when an individual stops working full-time B the definition most commonly used in empirical studies (Sickles & Taubman, 1986; Diamond & Hausman, 1984).

Methods

The data for this study are drawn from the public use tape of the 1995 Survey of Consumer Finances (SCF). The Survey of Consumer Finances is a triennial survey sponsored by the Federal Reserve with the cooperation of the Department of the Treasury. The purpose of the SCF is to provide comprehensive and detailed information on the financial characteristics of U.S. households. The SCF was chosen for this study because it provides information on a broad age-range of the U.S. population, and it specifically asks respondents when they plan to stop working full-time C planned retirement age. Households with a head age 35 to 70 years who was currently working full-time were selected, resulting in a sample of 1,703 households. Figure 1 shows the cumulative distribution of the planned retirement age. About 18% of the sample planned to retire by age 55, 36% planned to retire before age 62, and 51% planned to retire by age 62. Almost all respondents (88%) planned to retire by age 65, and 91% planned to retire by age 67. Ordinary least squares regression analysis was used to examine determinants of planned retirement age. The dependent variable was the planned retirement age of the householder. Predictors of the planned retirement age were selected based on review of empirical models of retirement behavior and are classified into three groups: financial variables, demographic variables, and perception variables.

Figure 1
Cumulative Distribution of Planned Retirement Age



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Findings

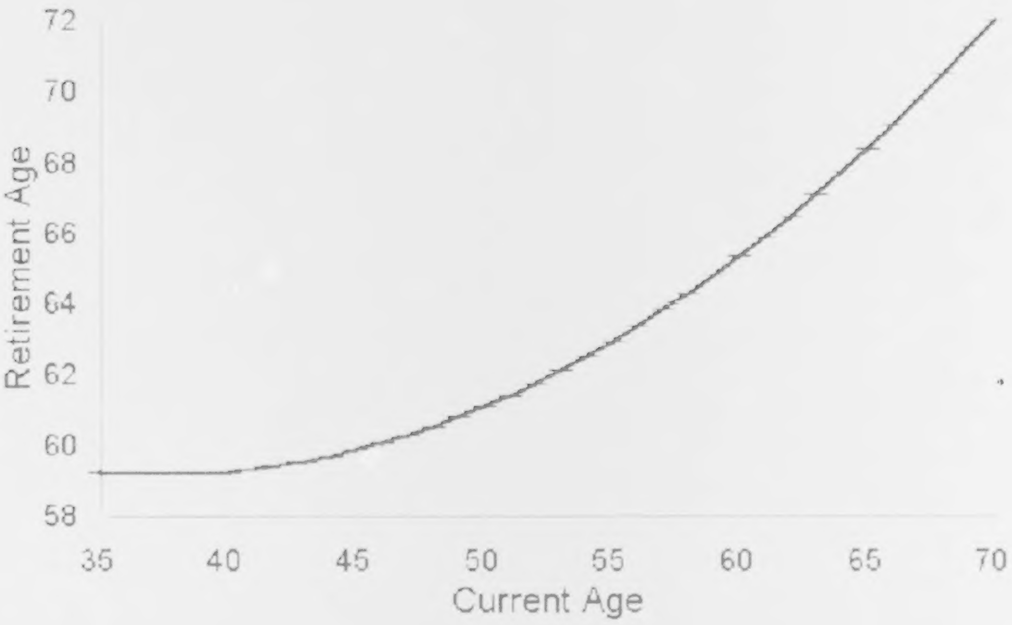
The retirement age prediction equation had an adjusted R-square of 0.21, and 13 of the 28 variables were significant at the 0.05 level or better (Table 1). The levels of financial assets, nonfinancial assets, and other private pension funds significantly lowered the planned retirement age. Levels of financial assets and nonfinancial assets lowered the planned retirement age relatively more than levels of IRA/Keogh accounts or defined-contribution pension plans. Ownership of a defined-benefit pension significantly decreased the planned retirement age. Being employed in less-skilled occupations (service, production/repair, farming/fishing), lower levels of education, and being Black or Hispanic decreased the planned retirement age significantly. If the householder had less than a high school diploma, the planned retirement age was 1.6 years lower than that of otherwise similar householders with a college degree. If the householder was Black or Hispanic the planned retirement age was 2.2 years lower than that of otherwise similar householders that were nonBlack and nonHispanic. On the other hand, non-investment income, anticipated life expectancy of the householder, and the combined effect of linear and quadratic age variables significantly increased the planned retirement age. The magnitudes of the income effect and the total age effect are relatively large. Figure 2 illustrates the large effect of age on the expected retirement age controlling other factors at mean levels. The age pattern suggests that adjustment in the planned retirement age occurs as workers' working years become longer. The effect of age on planned retirement age is also related to a survival effect. If someone who is 60 would not be in the sample, and cannot plan to retire at an age less than 60.

Table 1
Descriptive Statistics and Regression of Planned Retirement Age (N=1,703)

Variable	Mean or percent	Estimate	Prob > |T|	Sig
Intercept		73.136	0.0001	***
Financial Variables				
Log(non-investment income)	65.149	0.359	0.0258	*
Log(financial assets)	64.602	-0.161	0.0158	*
Log(nonfinancial assets)	215.816	-0.153	0.0497	*
Log(debt)	64.173	0.071	0.0592	
Log(IRA/KEOGH)	16.523	-0.076	0.0245	*
Log(Defined Contribution)	22.273	-0.058	0.0515	
Defined Benefit Ownership	32.8%	-0.699	0.0347	*
Demographic Variables				
Employed spouse	46.3%	0.239	0.4896	
Respondent in excellent health	36.0%	0.100	0.7610	
Spouse in excellent health	24.7%	0.461	0.2056	
Household size	2.97	0.065	0.6071	
Respondent self-employed	12.2%	0.076	0.8409	
Respondent occupation (reference category: managerial/professional)				
Technical/administrative	25.1%	0.123	0.7537	
Service	9.5%	-1.494	0.0241	*
Production/repair	12.8%	-1.447	0.0126	*
Operator/laborer	19.6%	-0.197	0.7134	
Farming/fishing	1.8%	-2.625	0.0147	*
Respondent education (reference category: college graduate or more)				
Less than high school	10.6%	-1.621	0.0162	*
High school graduate	30.0%	-0.617	0.1581	
Some college	25.2%	-0.243	0.5581	
Age of respondent	46.05	-0.897	0.0001	***
Age of respondent squared		0.012	0.0001	***
Male respondent	77.5%	0.253	0.6644	
Black or Hispanic respondent	16.1%	-2.170	0.0001	***
Married respondent	68.7%	-0.546	0.3728	
Perception Variables				
Life expectancy (years)	80.45	0.039	0.0060	***
Very satisfied with expected pension	5.8%	-0.806	0.1170	
Retirement is a saving goal	33.6%	-0.309	0.3136	
Model F-statistic (p-value)	17.565 (0.0001)			***

R-square: 0.2271 Adjusted R-square: 0.2142
Note: *p<.05, **p<.01, ***p<.001

Figure 2
Predicted Retirement Age by Current Age
(Based on regression in Table 1 at mean values of independent variables other than age)



Summary and Implications

The regression results suggest that financial capabilities to finance consumption in retirement as well as demographic characteristics and perceptions, including current age and anticipated life expectancy, strongly affect planned retirement age. The results also suggest that adjustments to planned retirement age take place over time. These adjustments may be in response to the realization that accumulated resources are not adequate to meet needs in retirement, thus causing workers to postpone retirement.

The ability of workers to adapt to further increases in Social Security retirement age depends on their capacity to extend their working lives and to accumulate enough savings to offset a delay or reduction in Social Security income. Alternatively, workers face retirement with reduced income. Adequacy of retirement resources is influenced by family income and wealth. Policies to increase pension coverage as well as increase private savings would help counter the negative effects of a decrease in Social Security income. The ability to extend the working life is influenced by health status as well as characteristics of the job. Some workers will have difficulty extending their working lives. Important questions to address with additional research include: Will employers be willing to retain and/or hire older workers? What will happen to older men and women who are not healthy enough to work full-time or who are unable to find jobs? What will happen to older workers in physically demanding jobs? What about older workers who prefer Abridge jobs@?

This study focused on financial and demographic characteristics as determinants of planned retirement age. However, attitudinal and psychological factors might also affect planned retirement age. In reality, individual responses to work and retirement incentives often vary substantially even among persons who appear to have much in common in terms of background characteristics and financial circumstances. Thus, unobserved, unmeasured individual differences might play an important role in retirement decisions. A comprehensive theory of work and retirement should be able to explain the substantial variations in retirement decisions that are observed among apparently similar individuals (Leonesio, 1996). Research that improves our understanding of factors related to planned retirement age will improve our ability to analyze policy issues, including proposed changes to the Social Security program, as well as provide better insight into how to influence individual behavior related to planning and saving for retirement.

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Employee Wellness Program Impact on Health Care Costs: Do Participation and Intensity of Participation Matter?

Employees are faced with the decision to support voluntary Employee Wellness Programs (EWP). This study utilizes primary survey and health insurance cost data to assess the impact of EWP participation and intensity of use on health care costs. This study suggests that EWP participants incur higher health care costs than non-participants, however those EWP participants who intensively utilize the program incur lower health care costs than those who use the program less intensively.

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Introduction

Health care costs have grown faster than the overall economy in 28 of the last 30 years (Yen, Edington & Witting, 1994). Provision of health care benefits has put a severe strain on public and private organizations giving them the incentive to examine innovative ways to reduce health care costs. Employees of public and private organizations are faced with the decision to support voluntary and involuntary Employee Wellness Programs (EWP), even though they may choose not to use them. EWP have been adopted by many organizations to prevent illness and injury and subsequently lower health care costs. This study challenges the popular notion, reported in a majority of previous EWP studies, which suggests that EWP participants incur lower health care costs (Pelletier, 1993 and 1996, Shepard, 1996). The purpose of this study is to determine the relationship of work site wellness participation status and the intensity of work site wellness participation with health care costs for a voluntary EWP implemented at a public institution.

Review of Literature

This review will focus on three areas: relationship between health risks and health costs; role of health promotion programs in controlling health care costs; and, methodological challenges related to health care cost analysis.

A radical shift in the causes of death in the United States has occurred within the past century. In 1900, the three leading causes of death were infectious diseases (National Center for Health Statistics, 1990): pneumonia and influenza, tuberculosis and diarrhea and distemper. Today, chronic disease, such as heart disease, cancer, and stroke, accounts for 6 out of the 10 leading causes of death (National Center for Health Statistics, 1990). Consequently, determining what factors contribute to developing these chronic diseases is of great importance. Lifestyle factors consistently account for over 50 percent of the causes of death due to preventable disease. Hence, improving lifestyle practices has a great potential for affecting mortality and morbidity. If lifestyle related disease is prevented or delayed, it is logical to conclude that costs related to treating those diseases will be delayed and possibly lowered. Numerous studies have been conducted in the area of health care cost containment. In a vast number of those investigations, researchers have found that individuals with high health risks are associated with higher health care costs than individuals with low health risks (Bertera, 1991; Brink, 1986; Kingery, Ellsworth, Corbett, Bowden & Brizzolara, 1994; Leigh & Fries, 1992; Yen, et al., 1991,1992,1994; Warner, 1990). The most frequently cited health risk factors are: cigarette smoking, obesity, excessive drinking, high cholesterol level, high blood pressure, lack of regular seat belt use and sedentary lifestyle (Bertera, 1991; Brink; 1986; Kingery et al., 1994; Leigh & Fries, 1992; Yen et al., 1991, 1992, 1994).

There is a growing body of research on the methodological limitations of using mean cost data to compare health care costs of high-risk and low-risk individuals (Dunnagan, Haynes & Noland, 1998; Kingery et al., 1994; Lynch, Teitelbaum & Main, 1991, 1992). In previous studies, researchers have placed individuals into high and low risk groups and then used the average (mean) of each groups' medical claims to compare costs (Bertera, 1991; Bly, Jones & Richardson, 1986; Brink, 1986). This method of reporting cost data does not take into account the highly skewed nature of medical cost data (Lynch et al., 1991). For this reason researchers need to alter their analysis to lower the potential for exaggerated or misleading results (Lynch et al., 1991, p. 126). Kingery et al. (1994) reported, "the danger of overselling the costs associated with elevated risk is that plan administrators may lose credibility when they fail to deliver predicted cost reductions after investment in health promotion programs" (p. 1346).

Recently, Haynes, Smith and Dunnagan (1998) discussed the potential for adverse selection bias to cause high cost users of health insurance benefits to participate in voluntary work site wellness programming. If adverse selection occurs in EWP, then one would expect program participants to have higher health related costs than non-participants. This study extends previous work by assessing the impact of the intensity of EWP participation on health care costs.

Empirical Considerations

This section summarizes the data and empirical models used. The data used in this study includes a survey of faculty members and health insurance cost data. The empirical models utilize non-linear (Tobit) statistical models to assess the impact of EWP participation and intensity of use on health care costs.

Data

This study utilizes primary data generated from a survey of university faculty and staff and health insurance claims data supplied by Blue Cross Blue Shield and Mutual of Omaha to examine the impact of EWP participation on health care costs. A 48-item questionnaire was developed to answer a variety of research questions. The health related data, demographics, controls for averse selection of high cost users to participate in wellness programming, and intensity of EWP participation were obtained from a questionnaire. Cost data for the investigation from January 1, 1993 through December 31, 1996 were obtained directly from the insurance companies of Blue Cross Blue Shield and Mutual of Omaha.

The sampling frame of this study included 1,940 full-time employees of Montana State University-Bozeman who worked on-campus and were eligible for full health insurance benefits between January 1, 1993 and December 31, 1996. Spouses, dependents, and retirees were excluded from the study. Only employees who worked continuously for the University since January 1, 1993, completed the research questionnaire, and provided their social security number to the researchers were included in the study. The final sample included 841 respondents, including 496 EWP participants and 345 EWP non-participants.

Empirical Model

The amount of health care costs incurred by the individual is affected by many socio-economic and demographic characteristics, health behaviors (e.g., exercise), health status (e.g., blood pressure), previous health care utilization, conversion experiences (e.g., heart attack), as well as participation in work site wellness programming. Consequently, the investigators collected data on these variables to develop the model used in this investigation.

The dependent variable used in this investigation was the log of the dollar value of health insurance claims from January 1, 1996 through December 31, 1996. The log transformation was used to decrease the variance of the cost data and to more normally distribute the dollar amounts.

The set of independent variables included employee wellness classification; intensity of EWP participation; previous utilization of health insurance (1993-1995); identification of employees who have initiated wellness programming due to significant health concerns (adverse selection); behavior classification based upon selected health behaviors; health status classification based upon selected health status indicators; employment classification; education; age; marital status; number of dependents; and, gender.

Employees were considered participants in the EWP if they had participated in health screenings, counseling, nutrition interventions, health education programming, and/or completed registration forms for exercise classes in 1996. The EWP participant variable was set as a zero-one dichotomous variable, which was set equal to 1 if the individual participated in health promotion activities. Previous research would suggest that the expected sign on the coefficient associated with wellness programming to be negative. That is, employee wellness participants have lower health insurance claims than non-wellness participants.

The intensity of EWP participation by the employees was evaluated by asking the respondent to indicate if they had participated in the following EWP activities: activity/exercise classes; health screenings; health education classes/seminars; counseling; stress management programming; nutrition counseling, and, other activities. A measure of EWP participation intensity was developed by summing the number of activities used by each respondent. Based on previous research, it was anticipated that the EWP participation intensity would be negatively correlated with health insurance costs.

A strong predictor of future health insurance utilization is past health insurance utilization. That is to say, individuals who have been high cost users of health insurance in the past tend to have similar consumption patterns in the future. Consequently, the investigators looked at health insurance costs to classify the employee as being high or low users of medical care services based upon his or her health insurance costs over a 3-year period (1993-1995). The median health care claim amount over the three year period was about $1,800. Those employees who had a 3-year cost-claim of $1,800 or less were classified as "low users." Those individuals who had a 3-year health insurance cost of over $1,800 were classified as "high users."

Control variables were introduced to address the adverse selection of employees who have initiated wellness programming due to significant health risk factors. The investigators asked a series of questions that identified employees who initiated participation in the wellness program because of a major illness/disease, health risk factor (such as high blood pressure and high cholesterol), health professional's recommendation to participate because of a risk for major illness/disease and problematic health screening results.

Four health behaviors were incorporated into the model as independent variables and they are as follows: tobacco use, alcohol use, seatbelt use and exercise. Three health status variables were used in the model as independent variables and they as follows: high blood pressure, high cholesterol and high body mass index. A number of basic demographic variables were also included in the model because these variables may impact the demand for health care services. The control variables included employment classification (faculty, or not), educational status, age, marital status, number of dependents and gender.

General descriptive statistics were used to describe the EWP participants and EWP non-participants. A Tobit regression analysis was used to determine the relationship between EWP participation (and intensity of participation) and health care costs.

Results

This section compares the health costs of EWP participants and non-participants and assesses the association between health costs and the intensity of EWP participation. This section reports the statistical results of this study using simple descriptive statistics and non-linear multivariate statistical models.

Table 1 compares employees who were classified as EWP participants and non-participants. The results suggest that the two groups were essentially the same based upon a number of demographic variables such as age, education and job classification. Using a 10 percent-level of significance, the EWP participants were some older and more likely to be female than non-participants.

Table 1. Summary of Personal and Demographic Characteristics for Respondents Participating or Not Participating in the Employee Wellness Program

Characteristic	Not an Employee Wellness Participant	Employee Wellness Participant
Age of the respondent, mean	43.8	45.9*
	(percentage)	
Marital status: married	80.0	78.2
Gender: male	57.6	42.3*
Education: high school graduate or less	25.8	24.4
Education: college graduate	23.8	26.8
Education: college graduate, masters	17.1	18.3
Education: college graduate, doctorate	33.3	30.4
Job classification: faculty	54.5	50.4
Observations	345	496

The EWP participants had similar health status, but more favorable health behavior indicators than EWP non-participants (Table 2). For example, three times as many EWP non-participants reported smoking, over five times as many reported using smokeless tobacco, and over twice as many did not regularly use their seat belts when compared to the EWP participants.

Table 2 Health Status Comparison between EWP Participants and Non-Participants

Variable	Not an Employee Wellness Participant	Employee Wellness Participant
Health Status		
High Blood Pressure	16.2	19.6
High Cholesterol	22.9	28.4
High BMI (high body fat)	20.6	20.6
Health Behavior		
Cigarette Smoker	12.8	4.2*
Smokeless Tobacco User	5.8	1.0*
Seatbelt Non-User (less than 100 %)	15.4	6.5*
Alcohol User (3 or more drinks per day)	4.6	4.0
Regular Exerciser	75.4	80.8
Observations	345	496

A number of statements were developed by the investigators to identify health risk factors that might facilitate recruitment into health enhancement programming and were also associated with increased health insurance costs. Specifically, the employees were given statements that asked if their recruitment was due to a major illness or disease, health risk factor of concern, referral by a health professional, abnormal health screenings, or depression. The results show that proportionally more of the EWP participants were recruited for these reasons than EWP non-participants. In addition, over 20 percent of the EWP participants sought out additional medical attention due to feedback that they received from EWP related activities. These results suggest that the EWP had a greater proportion of employees who initiated health enhancement programming because of factors that are associated with higher health insurance costs than EWP non-participants.

Tobit regressions were employed to identify the relationship between health insurance costs and wellness participation classification; and between health insurance costs and the intensity of wellness participation. This study uses a 10 percent level of significance. These results suggest that wellness employees have significantly higher costs than non-wellness participants after controlling for important demographic, health risks, and previous utilization variables. That is to say, after statistically controlling for differences between the two groups, EWP participants had higher health costs than non-participants (Table 3). In addition, Table 3 suggests that being classified as a high cost user of health insurance in the past was statistically significant and associated with higher costs.

Table 3 Determinants of the Total Health Insurance Claim Costs for All Respondents
(Tobit Regression, Log of Total Health Insurance Costs Dependent Variable)

Variable[1]	Parameter Estimate	Standard Error	p-value
Intercept	5.7160	1.8194	0.0017*
EWP participant in 1996	0.3631	0.1996	0.0689*
Previous health costs	1.8889	0.1971	0.0001*
Log Likelihood			-1,887

[1] Control variables include the following: self selection, health status, health behavior, faculty status, education, age, marital status, dependents and gender.

Using a sample of EWP participants only, this study examined the intensity of participation in wellness programming through exercise, health screenings, health education, counseling, stress management, and nutrition programming (Table 4). EWP participants who intensively utilize the program were found to have lower health insurance costs than individuals utilizing the program less intensively.

Table 4 Determinants of the Total Health Insurance Claim Costs for EWP Participants Only
(Tobit Regression, Log of Total Health Insurance Costs Dependent Variable)

Variable[1]	Parameter Estimate	Standard Error	p-value
Intercept	5.3373	2.1169	0.0117
EWP participant in 1996	-0.0089	0.0026	0.0006
Previous health costs	1.7080	0.2187	0.0001
Log Likelihood			-1,061

[1] Control variables include the following: self selection, health status, health behavior, faculty status, education, age, marital status, dependents and gender.

Study Limitations and Further Research

This study was limited by a number of factors. First, the investigators used a research design that was observational in nature. Not using true-experimental research designs is a common problem associated with work site health promotion evaluations. This research dilemma is caused by a number of factors such as organizational policy, experimental subjects' sharing information with control subjects, and limited evaluation resources. Nevertheless, the lack of true randomized designs does compromise the validity of the results. Second, the data collected through the survey instrument was self-reported which is not as accurate as direct measures. In addition, the data set was only cross sectional in nature. It would be more revealing to track the dependent and indicator variables used in this investigation over time to more accurately evaluate the costs associated with these variables. However, the costs associated with this type of investigation were cost prohibitive.

Despite these limitations the investigators were able to collect detailed data on over 800 employees. The results of the simple comparisons demonstrate that the EWP participants have less favorable health status and more favorable health behaviors than EWP non-participants. Furthermore, EWP has a two-times greater chance of recruiting high cost users of health insurance benefits than employees classified as EWP non-participants. However, when these differences are controlled for in the Tobit regression wellness participants still have significantly higher costs than EWP non-participants.

However, it is possible that the current model did not consider all of the variables that differentiate health insurance utilization between the EWP participants and EWP non-participants. For example, variables such as family history for risk factors such as cancer or cardiovascular disease could also be important indicator variables that need to be included in the regression analysis. At the same time it is possible that EWP participants cost more than EWP non-participants and this is the appropriate model for the analysis. In this case it may be that the EWP recruited employees who have higher costs than non-participants. Further investigations are needed to address this important consideration.

Perhaps the most interesting outcome was that health insurance costs were negatively associated with the intensity of EWP participation. Given that EWP participants had a number of factors that would increase health insurance utilization, such as poorer health status than EWP non-participants and problematic health screenings, this outcome would seem significant. However, the intensity variable only measured the number of activities used, not the intensity that each of these activities was employed. Further research is needed to address these limitations. While this study addresses pertinent questions concerning the relationship between EWP participation and health care costs. Further investigation is needed to adequately address the critical question - whether or not wellness programs reduce the health care costs of participants below those costs that they would have incurred in the absence of the program.

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Endnotes

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Factors Influencing Flextime Usage Among Employed Married Women

The 1997 Current Population Study was used to examine characteristics of flextime users among employed, married women and factors influencing the odds that an employed, married woman would use flextime. Odds of using flextime are greater for employed married women with higher education, a preschool aged child, who reside in the west or Midwest compared to the south, and who are employed in farming, fishery, or forestry related occupations compared to management or professional occupations.

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Introduction

In 1960, about 32% of married women were employed. By 1996, that figure had almost doubled (61.2%). The labor force participation rate of married women with children under 6 years old changed even more dramatically: at 18.6% in 1960, by 1996, the rate was 62.7% (U.S. Bureau of the Census, 1997). These statistics suggest that married women tend to be employed and, once employed, to remain so even after children are added to the family.

Several factors may account for these trends. In the economic boom following World War II, there was substantial growth in jobs such as health care, retail, sales, and clerical where female labor predominated. Women have attained higher levels of education in recent years. In 1960, 42.5 percent of women had completed four years of high school or more; 5.8 percent of women had completed four years of college or more. In 1996, 81.6 percent of women had completed four years of high school or more; 21.4 percent of women had completed four years of college or more. Women earned half of the master's degrees and over a third of the doctoral degrees awarded in 1994 (U.S. Bureau of the Census, 1997). During the 1980s and 1990s, many families have compensated for declining real wages and an increasing tax burden by sending the wife into the labor market to work or, if already employed, to work more hours (Mishel, Bernstein, and Schmitt, 1997).

A critical problem facing families with two working spouses and children is balancing time demands of work and family. Hochschild (1997) identifies three shifts that working parents have. The first shift is work. The second shift is time spent in household activities such as household chores, domestic management, and parenting. Research indicates that employed women undertake the majority of the second shift, resulting in high levels of work family conflict (Fox and Nickols, 1983; Hochschild, 1989, 1997; Nickols and Metzen, 1982; Robinson, 1977; Sanik, 1981). The third shift is time spent with children dealing with the emotional consequences of increased time spent in the first and second shifts. The third shift has come to be known as the time bind, and it is at the heart of work and family conflict.

Galinsky & Stein (1990) found that a flexible work schedule or "flextime" is employee's first choice for helping loosen the time bind and meet conflicting work and family time demands. With a flextime schedule employees choose their arrival and departure time, working a certain number of required hours per day and work week. Employees must be on the job during a core time set by the employer. Introduced in the US in the 1970's, flextime is now used by about a third of workers (Work and Family Resource Kit, 1989).

Flextime has recently been the focus of public policy. The Fair Labor Standards Act (FLSA) passed by Congress nearly 60 years ago mandates premium pay for working over 40 hours per week. Designed to give employers an economic incentive to limit hourly work time, it now hinders flexible work schedules. Amendments to the FLSA that would ease restrictions on overtime hours have been introduced in Congress. The Federal Employees Flexible and Compressed Work Schedules Act was passed in 1978, amending the FSLA to give Federal employees the opportunity to use flexible work schedules. In 1997, Senator John Ashcroft of Missouri sponsored the Family Friendly Workplace Act which would allow private sector employees to take time and a half off in lieu of time and a half pay; banking up to 240 hours and retaining the option of exchanging banked hours for pay at a later date, if desired (Workers, 1997).

Proponents of changing the FLSA argue that the 60 year old law does not meet current social and economic needs (Workers, 1997). Opponents of changing the FLSA fear offers of compensatory time in lieu of pay would only intensify problems of rising work hours and poorly distributed working time (Golden, 1997). To inform the flextime debate, it is important to examine the characteristics of those who do and do not use flextime as well as the factors associated with flextime use.

To date, relatively few studies of flextime have focused on a broad segment of the labor market. Rather, most studies have been localized surveys of employer and employee opinion of the value of a flextime schedule. The purpose of this paper is to use data from the 1997 Current Population Survey to compare the characteristics of employed, married women who do and do not use flextime and to examine the factors that influence the probability that an employed, married woman will use a flexible work schedule (flextime).

Review of Literature

Presser (1989) and Mellor (1986) used the Current Population Survey, May 1985 Supplement to analyze flextime use. Presser (1989) found that married women were more likely to have flexible work schedules than unmarried women, and mothers of school-aged children were more likely than mothers of preschool age children to use flextime. Mellor (1986) found that 9.1 million full-time workers reported using flextime; men reported higher incidence of use than women; whites were more likely than Black or Hispanics to use flextime; and flexible work schedules were most common in age groups 35 to 44 and 65+.

Ezra and Deckman (1996) used the Survey of Federal Employees to see what family friendly policies the government provided for full-time, white collar employees and how satisfied employees were in balancing work and family. Their study examined the influence gender, marital status, flexible work schedule, compressed work schedule, presence of children under age 6, child care availability satisfaction and spousal employment had on mother's, father's, and nonparent's satisfaction with work/family balance. Results indicated that mothers of children under age 6 were less satisfied with work/family balance than mothers with older children, and parents with flexible work schedules were more satisfied with work/family balance compared with parents who did not use this type of work schedule.

Ralson (1990) examined flextime use by women employed by two southern companies. Winett and Neale (1980) considered gender, age, number and age of children and years on the job as factors affecting flextime use. Both studies found employees on flextime schedules reported decreased absenteeism, easier coordination of work and family responsibilities, and increased job productivity. Bohen and Viveros-Long (1981) compared standard schedules to flextime in two agencies. Their sample was predominately white and almost evenly split between women and men. Consistent with other studies, results indicated that flextime workers experienced less work/family stress than standard time employees, and 33% of flextime employees reported spending more time with family.

Most existing research has compared use of a traditional work schedule with a flextime schedule. Employees or employers report on the benefits or problems with flextime. This study adds to existing research in two important ways. First, it examines the usage of flextime by married women while controlling for factors such as race, occupation, and region of residence, factors that have received little or no attention in previous research. Second, this study uses the 1997 Current Population Survey, the most recent national survey available on flextime.

Method

Data

This study uses data from the Current Population Survey, May 1997 Supplement on work schedules. The survey is a household sample survey focusing on the noninstitutionalized civilian population of the United States. Census Bureau staff collected the data using interviews conducted May 1997 (U.S. Department of Commerce, 1998). Data on work schedules were asked of persons 15 years old or older who were currently employed.

Sample

Employed, married women were selected for this study because research indicates this group is likely to face competing time pressures from work and family (Fox and Nickols, 1983; Hochschild, 1989, 1997; Nickols and Metzen, 1982; Presser, 1989; Robinson, 1977; Sanik, 1981). Women with and without children at home were selected because, although children do increase time pressures between work and family, they are not the only reason flextime is used. Focusing on employed, married women with and without children, it is possible to examine the influence of presence of children on the probability of flextime usage while controlling for the influence of marital status and other socio-economic and demographic factors. Sample size was 9,204; 2,784 used flextime while 6,420 did not. Responses in the logistic regression were weighted to give a more accurate representation of the United States population. Due to statistical software limitations, responses were not weighted in the t-test results.

Variables

The dependent variable was dichotomous, coded 1 if the employed, married woman used a flextime schedule, 0 otherwise. Independent variables were selected to account for variations in personal, family, and employment characteristics and included: age, education, and race of the woman; number of household members, youngest child less than 6 years old, youngest child between age 6 and 11, youngest child between age 12 and 17; family income level, homeownership, woman's occupation and whether or not she is a government worker.

Age was measured in years. Education level was measured as a set of categorical variables: less than high school, high school degree (reference category in the multivariate analysis), some college, earned college degree, earned master's or doctoral degree. Higher educational levels are expected to increase the odds of an employed, married woman using flextime.

Race is measured as a set of categorical variables: white (reference group), Black, Indian, or Asian. Previous research indicates that whites have a higher rate of flextime use than Blacks or Hispanics (Mellor, 1986).

Larger household size and young children can increase family time demands. The number of household members is a continuous variable. Age of the youngest child was divided into three categorical variables: youngest child less than 6 years old, youngest child between age 6 and 11, and youngest child between age 12 and 17. Having a larger family and having a preschool age young child are expected to be associated with a greater likelihood of using a flextime work schedule.

Income was measured as a series of categorical variables: < \$10,000, \$10,000-\$19,999, \$20,000-\$29,999, \$30,000-\$39,999, \$40,000-\$49,999, \$50,000-\$59,999, \$60,000-\$74,999, and > \$75,000 (reference group). Homeownership (coded 1 if homeowner, 0 otherwise) was included to proxy both home maintenance and repair time demands and wealth holdings.

Region of residence was included to control for regional differences in availability of flextime. In the multivariate analysis, the southern region was the reference category.

Not all occupations are amenable to a flextime work schedule. To control for possible occupational differences in flextime availability, dummy variables for occupation were used in the analysis. Occupations were divided into managerial/professional/sales (the reference category in the multivariate analysis), service, production/manufacturing, and farm/forestry/fishing. It is expected that use of flextime schedules is more likely for women employed in management and professional jobs versus other occupations.

Previous research indicates that a large percentage of federal workers use flexible work schedules. It is expected that government workers would be more likely to use a flexible work schedule (Ezra and Deckman, 1996). Government worker was coded 1 if employed by federal, state, or local government; zero otherwise.

Empirical model

Since the dependent variable in this study, use of flextime, is a dichotomous variable, ordinary least squares regression is not appropriate (Aldrich and Nelson, 1984). Consequently, logistic regression is used in this study.

To assess the influence of selected socio-economic and demographic factors on use of flextime by employed, married women, the following model was used:

$$\text{Probability(use flextime)} = 1/(1+e^{-z}) \qquad (1)$$

where z is a linear combination

$$z = b_0 + \Sigma b_i x_i + e$$

and b_0 is a constant; b_i is a vector of parameter coefficients; x_i is the vector of independent variables; e is a random error term. In this form, the dependent variable can be thought of as the probability that an employed married woman will use a flextime work schedule. To facilitate computation, the model may be rewritten as:

$$\text{Log [probability(use flextime)/probability(do not use flextime)]} = b_0 + \Sigma b_i x_i + e \qquad (2)$$

Using this format, the dependent variable is called the log odds where odds are defined as the ratio of the probability that an event will occur to the probability that it will not. The b_is are interpreted as measuring change in the log odds given a one unit change in the independent variable. Computational results for the log odds give the sign and level of statistical significance for each independent variable.

Findings

Means of selected characteristics of employed, married women who do and do not use flextime are reported in Table 1. A t test of mean differences was performed to indicate statistically significant mean differences at the 0.001 level. Results indicated that, compared with those who did not use flextime, flextime users had relatively higher levels of education, were more likely to be white, to have household before tax income of $75,000 and above, reside in the Midwest, to work in management or farm related occupations and to not be a government worker.

Results of the logistic regression are reported in Table 2. Since it is easier to think of odds versus log odds, discussion will focus on odds. All else equal, the odds of using a flextime schedule are significantly higher for employed, married women with a master's degree or higher compared to employed, married women with a high school degree. However, having less than a high school diploma resulted in decreased odds of flextime usage compared to having a high school degree.

Having a young child less than six years of age significantly increased the odds of working a flextime schedule after controlling for other factors. This result is consistent with research that indicates children under age six are relatively more time intensive and their presence is correlated with higher levels of work family conflict compared with school aged children (Higgins, Duxbury, and Lee, 1994).

Employed, married women with household before tax income levels ranging from $10,000 to $74,999 have decreased odds of using flextime compared with those having household incomes of $75,000 and above.

All else equal, married women employed in the production manufacturing sector had lower odds of using flextime compared with women employed in management, professional, or sales occupations. But, married women employed in farming, forestry, or fishing had higher odds of utilizing flextime compared to those employed in sales, management, or professional, a surprising result that may be due to relatively low numbers in farm related work.

Residence in the West or Midwest was associated with greater odds of working a flextime schedule compared to residence in the South. Contrary to expectations and previous research (Ezra and Deckman, 1996), government workers were less likely to use a flexible work schedule.

Contrary to previous research (Ezra and Deckman, 1996; Mellor, 1986; Presser, 1989; Winett and Neal, 1980) age, race, having the youngest child between 6-11 or 12-17 were not significant factors in the analysis. Also not significant were the number of household members, homeownership, residence in the Northeast (compared to the South), and working in service related occupations (compared to managerial or professional occupations).

From the results of the descriptive and multivariate analysis, a general profile of the flextime user among employed, married women emerges. The flextime user is likely to be white, highly educated, with a family before tax income of $75,000 or more, employed in a managerial professional or farming occupation. She is more likely to have a preschool aged child, and live in the West or Midwest.

Summary and Suggestions for Future Research

Married women in the workforce, especially those with preschool aged children, face competing time demands for work, household management, and child care - often resulting in a tight time bind and conflicting pressures from work and home. Flextime can help these women loosen that time bind, meeting family demands without having to sacrifice time on the job and employment income.

Results of this study suggest that there are significant differences between those who do and do not use flextime among employed, married women. Higher levels of education, income, and certain types of occupations are significant factors associated with greater odds of flextime use. These findings inform the public policy debate surrounding amendment of the FLSA and highlight the need for additional research. For example, findings of this study indicate employed, married women with higher levels of education have greater odds of using flextime. But, does that mean those women with lower levels of education do not prefer a flextime schedule or that their access to such an option is limited? If the reasons for not using a flextime schedule are based in personal preference, no change in the FLSA is warranted. However, if structural barriers to flextime usage exist in the occupations that are most often filled by women with relatively low education, changing the FLSA could be beneficial. Results of this study suggest there are occupational differences in the odds of using flextime, lending support to the notion that some occupations may currently be more amenable to flexible work schedules than others. Results also indicate that the presence of a preschool age child and household before tax income level impact flextime usage. The highly educated and those with higher household income levels may have greater work autonomy hence more opportunity to use flexible work schedules. Working mothers may use flextime to balance childcare needs and work schedules.

Table 1
t-test of means of independent variables for those who do and do not use flextime (Unweighted)

	Use Flextime (N = 2784)	Do not use Flextime (N = 6420)
Age	40.84	40.85
Education		
high school	**.04**[a]	**.08**
High school	.32	.38
Some college	.30	.28
College	.22	.19
MS or Ph.D. degree	**.12**	**.09**
Race		
White	**.90**	**.87**
Black	**.05**	**.08**
Indian	.01	.01
Asian	.04	.04
Number of children	.85	.82
Number HH members	3.27	3.35
Youngest child < 6	.15	.15
Youngest child 6-11	.28	.29
Youngest child 12-17	.13	.14
Income level		
Less than 10,000	.01	.02
10,000 - 19,999	.04	.05
20,000 - 29,000	**.08**	**.12**
30,000 - 39,000	.12	.15
40,000 - 49,000	.13	.14
50,000 - 59,000	.14	.15
60,000 - 74,999	.15	.15
75,000 and above	**.32**	**.22**
Homeownership	.84	.81
Region		
Northeast	.18	.19
West	.26	.23
Midwest	**.29**	**.24**
South	**.27**	**.34**
Occupation		
Mgmt Prof Sales	**.83**	**.76**
Service	.10	.11
Production Mfg	**.04**	**.12**
Farm Forestry Fishing	**.03**	**.01**
Government worker	**.15**	**.25**

[a] Statistically significant differences at the .001 level are indicated by bold print.

Table 2
Logistic regression coefficients for the logged-odds of an employed married woman using flextime (N=9204, Weighted)

Variables	B
Age	0.005
Education	
high school	-0.361*
Some college	0.081
College	0.167
Master's or Ph.D.	0.334**
Race	
Black	-0.203
Indian	-0.025
Asian	-0.006
Number of HH members	-0.044
Youngest child < 6	0.215*
Youngest child 6-11	0.177
Youngest child 12-17	-0.000
Income	
< 10,000	-0.547*
10,000-19,999	-0.504**
20,000-29,999	-0.535**
30,000-39,999	-0.508**
40,000-49,999	-0.407**
50,000-59,999	0.294**
60,000-74,999	0.252**
Homeownership	0.041
Region	
Northeast	-0.104
West	0.224**
Midwest	0.280**
Occupation	
Service	0.051
Production Mfg	-1.134**
Farm Forestry Fishing	1.016**
Government Worker	-0.906**
Constant	-0.638**
2 log likelihood	10692.98

**p < .001
*p < .01

The Current Population Survey did not collect data on satisfaction with flextime. We do not know if employees and employers are pleased with the flextime arrangement or whether the employers were able to realize benefits of increased morale, increased productivity, or decreased absenteeism found in company specific research. Also, we do not know the specific household or family related tasks that an employee was either able to complete or able to complete in a more efficient manner because of using flextime. In future research, it would be informative to gather such information along with data on characteristics of those who do and do not use flextime. This study focused on the use of flextime by employed married women. Future research could examine flextime use by employed single parents or compare flextime use of employed fathers and mothers.

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Endnotes

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[3] Calculation of the odds requires taking the antilog of equation 2. The sign of the logged odds or the odds are the same.

The Impact of Health on Consumer Acceptance of Biogenetic Foods: The Case of Celiac Disease Sufferers

This study concerns celiac disease sufferers' knowledge, perceptions and acceptance of biogenetic foods. Mailed questionnaires from 258 Quebec celiacs were analyzed. Celiacs were as confident in food safety controls as the general Quebec population and were as likely to insist on mandatory labeling of biogenetic foods. However, they were more supportive of the development of biogenetic foods, saw fewer population risks from them, and were somewhat less concerned about their possible negative health effects.

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Recent advances in the use of biotechnology in the food industry have caused uneasiness among consumers (Bord & O'Conner, 1990; Douthitt, 1995; Grobe & Douthitt, 1995; Misra, Grotegut & Clem, 1997; Optima, 1994; Sapp, Harrod & Zhao, 1994; Sparkes, Shepherd & Frewer, 1994; Sparkes & Shepherd, 1994). Biogenetic engineering of foods permits the rapid transfer of specific genetic traits from one living organism to another. Traditional methods of producing genetic hybrids through cross fertilization are much slower and less precise. In addition, they do not permit the transfer of genes from one species to another, such as from corn to soybeans (AAFC, 1996; ISFT, 1996; Kreuzer & Massey, 1996).

Even though genetic engineering offers numerous possible applications in the production of new foods and food substances (Monsanto, 1995), consumers are worried about the safety of genetic foods for human consumption (Optima, 1994) and are uncertain of the ethical implications of creating new biogenetic foods (Sparkes et al., 1994; Hoban, Woodrum & Czaja, 1992). Despite increasing apprehensions, consumers are not necessarily rejecting the idea of consuming genetically modified foods. Several studies have already found that consumers are willing to purchase such foods (Optima, 1994; Misra, Grotegut & Clem, 1997; Buhr, Hayes, Shogren & Kliebenstein, 1993; Duhaime, Lachance, Tremblay, Pelletier, Rousseau & Tremblay, 1997; Frewer, Howard & Shepherd, 1996). Their willingness to purchase seems to vary depending on the specific nature of the genetic modification and on the perceived tangible benefits of the modification (Frewer, et al., 1995; Optima, 1994).

Consumers who suffer from food allergies or intolerances are necessarily more preoccupied with the impact of foods on their health (Metcalfe, Astwood, Townsend, Sampson, Taylor & Fuchs, 1996). Will such consumers hesitate even more to embrace emerging biogenetic foods? This exploratory study reports on findings from a sample of celiac disease sufferers regarding their knowledge, perceptions and willingness to purchase biogenetic foods specifically engineered for their consumption. Celiac disease results from a permanent intolerance to the gliadin (but not the glutenin) present in wheat gluten, as well as to similar prolamins present in many other grains. Diets of celiac disease sufferers are extremely restricted in choice of foods from the bread and grains food group. Using biogenetic engineering, it may be possible to produce glutenin that would be totally exempt of gliadin, for use in bakery products. Such products would offer celiac disease sufferers not only a greater variety of bakery products, but also products with enhanced sensory properties (texture and elasticity). This study was part of a larger multidisciplinary project on the use of biogenetic engineering to produce bio-medical plant bi-products, such as insulin, interleukine-2, proteins and purified glutenin.

Research Methodology

The population of interest for this study was all adults living in the province of Quebec, Canada, who were diagnosed or who had children diagnosed with celiac disease. The sampling frame for the study consisted of all members, both past and present, of the Fondation quebecoise de la maladie coeliaque based in Montreal, Quebec. The lists of former and current members contained approximately 1,700 names. Using a simple random sampling technique, 617 names were selected to receive a mailed questionnaire.

The questionnaire was composed of 229 questions grouped in five sections: socio-demographics, health, food purchasing and consumption habits, daily hassles caused by celiac disease and perceptions of biogenetic foods. The questionnaire was pre-tested to verify question comprehension by celiac disease sufferers. The survey was mailed in the fall of 1996 with a cover letter explaining the study's objectives and steps taken to insure the confidentiality of responses. Due to cost constraints, no follow-up reminder was sent. A total of 299 questionnaires were returned resulting in a response rate of 49 percent; however, 20 questionnaires were discarded because they were too incomplete or because the respondents admitted that they were not following a gluten-free diet. An additional 21 respondents were dropped from the current study because they were under the age of 18. The final sample size for this study is 258. Most respondents were female. Ages ranged from 18 to 84 with an average of 48.6 years (s 12.8 years). Over half of the respondents had completed Quebec's junior college system or had university degrees. The median gross household income was between $40,000 and $60,000 (Cndn) a year.

The following section compares the descriptive findings (%) from this study of Quebec celiac disease sufferers to those found in two general population studies, one of 1,008 Quebecois (Duhaime et al., 1997) and one of 2,000 Canadians (Optima, 1994), regarding consumer knowledge and attitudes towards biogenetic foods. Readers should note that the percentages given take into consideration those who did not respond to a given question. Results from the analysis of a PROBIT model predicting celiac sufferers willingness to purchase bakery products with biogenetically engineered glutenin are also summarized.

Results and Discussion

Knowledge of Biogenetic Foods

After briefly defining what constitutes a genetically engineered food, the questionnaire used in this study asked how much the respondent had already heard about such foods. Only 35 percent of those sampled indicated that they had already heard about such foods. Duhaime et al. (1997, p. 81) found that 82 percent of the Quebecois who responded to their telephone survey had already heard about food biotechnology in general. Optima's (1994, p. 9) nation wide telephone survey of Canadians found that 70 percent of those sampled said that they had already heard about tomatoes genetically modified to increase their shelf life and flavor.

This very large difference in prior knowledge of biogenetic foods potentially indicates that Quebec celiac disease sufferers are much more ignorant of biogenetic foods than are the general Quebec and Canadian populations. However, this celiac study collected data by means of a mailed questionnaire, whereas both of the general population studies used telephone surveys. The results from the general public surveys may reflect a very strong social-desirability bias among the general public with regard to knowledge of biogenetic foods (i.e., people do not want to verbally admit to someone else that they have not already heard about biogenetic foods).

Confidence in Safety Controls

The level of confidence in government and industry controls over the safety of new food products was relatively high among Quebec celiac sufferers. Twenty-one percent totally agreed and 58 percent somewhat agreed that they are confident. In Quebec, Duhaime et al. (1997, p. 80) found that 22 percent of their respondents reported being very confident in government control over the quality of new foods in general, and an additional 65 percent had a moderate level of confidence. In a similar vein, 85 percent of the Quebecois sampled were very confident or moderately confident in food manufacturers' control over new food quality. However, Optima (1994, Annex B, p. 16) found that only 23 percent of Canadians sampled 'totally' or 'somewhat' agreed that biotechnology is adequately controlled by government.

In general, Quebec celiac sufferers appear to mirror the confidence of the larger Quebec population regarding safety controls over new biogenetic foods. The level of confidence in controls would appear to be lower in the general Canadian population; however, levels of confidence in food safety controls may have increased in the years since the Canadian study was conducted.

Labeling of Biogenetic Foods

When asked whether the labeling of genetically modified foods should be mandatory, 82 percent of the celiac disease sufferers were totally in agreement and 12 percent somewhat agreed. Ninety-five percent of Canadians surveyed by Optima (1994, p. 19) agreed that they would want genetically modified foods be so labeled; however, only 83 percent agreed that food product labels should signal that a biotech process was used to produce it (p. 18). The Duhaime et al. (1997) study had no question regarding labeling of genetically modified foods. It appears that Quebec celiac sufferers mirror the larger Canadian sentiment that biogenetic foods should be so labeled.

Support the Development of Biogenetic Foods

When asked how much society should be encouraging the development of genetically engineered foods, 36 percent of celiac sufferers agreed that such foods should be 'strongly encouraged', but an additional 45 percent indicated that it should be 'encouraged'. In response to a simple 'yes/no' question, 69 percent of the Quebecois surveyed by Duhaime et al. (1996, p. 82) supported the use of biotechnology in the production of food. The Optima study (1994, p. 31) found that 37 percent of Canadians surveyed agreed that the government should encourage the development of biotechnology *in general* despite possible risks. Quebec celiac disease sufferers appear somewhat more supportive of the development of biogenetic foods than the general population in Quebec. Since the question asked by Optima (1994) is so different than that asked by the current study and by Duhaime et al. (1997) it is difficult to say whether Quebecois are more supportive of biogenetic foods than the general Canadian population.

Support for Specific Biogenetic Foods

The questionnaire in the current study explained that it may be possible to genetically engineer glutenin totally exempt of all traces of the toxic gliadin which provokes celiac disease. It was noted that this biogenetic glutenin could improve the texture and flavor of bakery products specifically marketed to celiac disease sufferers. Respondents were then asked to what extent society should be encouraging the creation of biogenetic glutenin. At this point, the percentage of respondents indicating 'strongly encouraged' jumped to 55 percent, with another 30 percent indicating that this particular application of genetic engineering should be 'encouraged'. These results imply that people whose health status is compromised by dietary restrictions more strongly endorse the development of biogenetic foods when those foods are designed to improve their own situation.

Duhaime et al. (1997, p. 84) reported that 83 percent of the Quebecois surveyed specifically supported the production of a more nutritious potato through the genetic transfer of a gene from rice. This is also a sharp increase over the 69 percent who supported the production of biotech foods in general (p. 82). The Quebec population, like the celiac sufferers in this study, have more favorable attitudes toward biotech foods that are modified for purposes of nutrition. Unfortunately, Optima's (1994) study of Canadians had no comparable question regarding the level of support for the development of a tomato genetically modified for shelf life and flavor.

Risks from Biogenetic Foods

When asked their degree of agreement with the phrase 'Genetic engineering generates more public risks than benefits', 11 percent of celiac sufferers totally agreed and 25 percent somewhat agreed. In Optima's study (1994, p. 7), 42 percent agreed with the phrase 'Science and technology have helped to make the world we live in more risky' and 33 percent agreed with the phrase 'Biotechnology might make the world we live in more risky' (p. 29). Duhaime et al. (1997, p. 81) found that 15 percent of Quebecois surveyed strongly agreed that 'Science and technology have helped to make the world we live in more risky', while 45 percent somewhat agreed. In general, these results imply that the general Quebecois population sees more risks from the use of biotechnology, while Quebec celiac sufferers and the Canadian population see fewer risks.

When specifically asked about health risks, 27 percent of the celiac disease sufferers indicated that they would be 'very' worried about personal health risks associated with genetically modified glutenin. An additional 38 percent said they would be 'somewhat' worried. In contrast, almost 50 percent of the Canadians surveyed by Optima (1994, Annex, p. 5) indicated that they would be 'very' worried about general health risks from a tomato genetically modified for better shelf life and flavor. An additional 16 percent said they would be 'somewhat' worried. Thus, the Quebec celiac disease sufferers were much less likely to be 'very' concerned about health risks from a specific biogenetic food. The Quebecois in Duhaime et al.'s study (1997, p. 83) were asked whether they thought agri-food biotechnologies *in general* would have mostly beneficial or mostly negative effects on human health. Only 29 percent felt that agri-food biotechnologies would have a mostly negative impact on health.

Purchase Probability

When asked about how probable it was that they would actually purchase food products containing genetically modified glutenin, 28 percent of the celiac sufferers surveyed indicated that they would most assuredly purchase them and an additional 55 percent indicated that they would probably purchase them. This level of willingness to purchase was much higher than that found in the two general population studies. Optima (1994, p. 18) found that only 49 percent of the Canadians surveyed were willing to purchase foods produced using biotechnology if they were more nutritious than other foods. When Optima (1994, Annex B, p.5) specifically asked about willingness to purchase tomatoes genetically modified to improve shelf life and flavor, only 26 percent of those surveyed reported that they would 'very likely' purchase such tomatoes and 18 percent believed that it was 'somewhat likely' that they would purchase such tomatoes. The celiacs' high degree of willingness to purchase indicates a rather great potential for a niche market for biogenetic foods specifically designed for their consumption.

In their survey, Duhaime et al. (1997, p. 85) found that 52 percent of Quebecois would be likely to purchase a genetically modified potato that was of better quality and flavor, but cost ten percent more. The current study also addressed the issue of price. Gluten-free foods specifically produced for celiac sufferers currently cost much more than foods produced for the general public. Despite paying more for gluten-free products, these products have inferior texture and flavor because they are gluten-free. After explaining that genetically modified glutenin, exempt of toxic gliadin, could be added to gluten-free products to improve their texture and flavor, 31 percent of celiac sufferers indicated that they would be willing to spend one to five percent more to obtain them, an additional 16 percent would be willing to spend six to ten more, and seven percent were willing to pay over 10 percent more. Again, these results indicate a rather great potential for a niche market of specifically designed biogenetic foods, despite the likelihood that such foods would cost these consumers more.

Predicting Purchase Probability

The second goal of this paper was to estimate a PROBIT model of celiac sufferers' willingness to purchase bakery products containing biogenetic glutenin. Willingness to purchase was coded such that 0 indicated some degree of hesitation regarding the respondent's willingness to purchase and 1 indicated that the respondent believed that they would 'definitely' purchase. Among the explanatory variables were three socio-demographic characteristics (age, sex and education), health status (measured by frequency of celiac disease symptoms), current dietary habits (frequency of consuming gluten-free bread and satisfaction with gluten-free products currently on the market) and attitudes toward health and biogenetic foods (reading about nutrition/health, ethical beliefs regarding biogenetics, level of confidence in safety controls on biogenetic foods, desire for labeling of biogenetic foods and fear that biogenetic glutenin would pose a personal health risk). Due to item non-responses for the nine variables in the model, the sample size dropped to 144. T-tests of differences between those remaining in the analysis versus those excluded indicated that those who dropped out due to missing data were significantly older, were women and were less well educated.

Both LOGIT and PROBIT models were estimated, but the results from the PROBIT model more accurately fit the data. The Pesaran-Timmermann test statistic for the model was 4.59 (p 0.000) and the pseudo-R-Squared was 0.24. Willingness to purchase was accurately predicted for 76 percent of the respondents who remained in the analysis. The marginal effect of each independent variable on the probability of purchase was computed at the mean. Results, presented in Table 1, indicate that age, sex and education did not significantly influence willingness to purchase.

Those celiacs who more frequently experienced the classic symptoms of their disease (diarrhea, flatulence and stomach pain) were less willing to purchase food products containing biogenetic glutenin. Celiacs who frequently experience symptoms are likely more sensitive to the presence of gliadin in their diets. They may doubt the efficacy of the biogenetic process to completely eliminate all traces of toxic gliadin and, therefore, be fearful of purchasing products containing biogenetic glutenin. As anticipated, the results from the model indicate that celiac sufferers who were less satisfied with gluten-free products currently on the market were significantly more willing to purchase products containing biogenetic glutenin. However, frequency of consuming gluten-free bread had no significant influence on their willingness to purchase new bakery products containing biogenetic glutenin.

Three variables measuring general concerns about biogenetics and biogenetic foods also impacted willingness to purchase products with biogenetic glutenin. Each of these variables had relatively large marginal effects on willingness to purchase. As expected, those celiac sufferers who were most concerned about the ethics of biogenetics and who had little confidence in government and industry controls over the safety of new food products

Table 1

Probit analysis of celiacs' willingness to purchase biogenetic bakery products (0=not willing)(n=144)

Independent Variables	Regression coefficient	Coefficient standard error	P-value	Marginal effects
Age	-0.003	-0.289	0.773	-0.001
Sex (1=female)	0.272	0.968	0.335	0.055*
Education	-0.080	-0.642	0.522	-0.026
Frequency of symptoms	-0.181	-2.719	0.007	-0.058
Frequency eat gluten-free bread	-0.177	-1.217	0.226	-0.056
Satisfaction gluten-free products	-0.234	-2.475	0.015	-0.074
Frequency read nutrition/health	-0.133	-0.748	0.456	-0.042
Believe biogenetics is ethical	0.384	3.719	0.000	0.122
Confident industry/gov't controls	0.513	2.095	0.038	0.163
Believe in mandatory labeling	0.669	1.870	0.064	0.154**
Fear health risk of biogenetic glutenin	-0.119	-0.796	0.428	-0.038
Ordinate	-3.570	-2.562	0.012	

*Probability for men minus probability for women

**Probability for "not believing" in mandatory labeling minus probability for "believing"

were the least willing to purchase foods with biogenetic glutenin. Celiac sufferers who believed strongly in the mandatory labeling of biogenetic food products were also those who were more willing to purchase foods with biogenetic glutenin. Perhaps those who are unwilling to purchase foods with biogenetic glutenin anticipate that, should such foods become available, they would turn to non-traditional food sources that guarantee their products as being free of biogenetic glutenin. The labeling of products with biogenetic glutenin would thus become a mute point.

Duhaime et al. (1997, p. 137) tested a LOGIT model of Quebecois' willingness to purchase biotech foods if they were of better quality and taste, but cost ten percent more than other foods. According to their results, confidence in government and industry controls over food quality did not significantly predict willingness to purchase, nor did ethically accepting the use of biotechnology to modify plants. Having a positive attitude toward science and technology, supporting the development of biotech foods and believing that biotechnology generates more positive effects than negative were among the variables in their model that did significantly influence willingness to purchase.

Conclusions and Implications

It appears that this sub-group of the Canadian population, suffering from the devastating effects of celiac disease, are as confident in government and industry controls over the safety of new food products being introduced on the market as the more general population. They are also as likely to agree that labeling of biogenetic foods should be mandatory. However, they are more supportive of the development of biogenetic foods (especially biogenetic glutenin), see fewer risks to the general population from biogenetic foods, and are somewhat less concerned about possible negative health effects from consuming a specific biogenetic food than are the general public. Celiac sufferers appear hopeful that biotechnology can help to diversify and improve foods, and this is especially true concerning foods that might be specifically developed for their own personal consumption. They also report being much more willing than the general Canadian public to purchase foods containing genetically engineered food additives. However, results from the multivariate Probit analysis indicate that the more they experience the symptoms of celiac disease (i.e., the greater their sensitivity to the presence of gliadin in their diet), the less they are willing to purchase foods with biogenetic glutenin. The severity of a food allergy or intolerance may temper enthusiasm for new food products purported to be safe for their consumption. In contrast, the less they are satisfied with current gluten-free food products specifically designed for their consumption, the more they are willing to purchase new foods with biogenetic glutenin.

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The Effect of Consumer Label Use on Diet Quality

This study examines the effect of consumer label use on diet quality of Americans. Using an endogenous switching regression model, results indicate that label use improves diet quality by as much as 14 points on a 100 point Healthy Eating Index Scale. Use of health claims among the information on food labels provides the highest level of improvement in diet quality.

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Introduction

Many Americans are not meeting dietary recommendations. The U.S. Department of Agriculture revealed that only about 12 percent of Americans are eating healthfully. This statistic is a concern because four of the top ten causes of death in the United States – heart disease, cancer, stroke, and diabetes – are associated with poor diets. Diet-related health conditions cost society an estimated $250 billion annually in medical costs and lost productivity (Frazao, 1995).

Concerns about the effect of diet on health have resulted in the legislation of the Nutritional Labeling and Education Act (NLEA) and its implementation in 1994. The NLEA instituted sweeping changes to replace the voluntary system of labeling established by the Food and Drug Administration (FDA) in 1973 (Nayga, 1996). Hence, the NLEA was implemented to provide consistent, understandable, and usable nutritional labels that can help consumers make healthier food choices and, therefore, improve the quality of their diets.

The purpose of this study is to assess the effectiveness of the NLEA in terms of diet quality improvements. Specifically, this study will attempt to determine the characteristics of consumers who use nutritional labels as well as to evaluate the effect of consumer label use on diet quality as measured by the Healthy Eating Index (HEI) developed by the USDA.

The Econometric Model

To assess the effect of consumer label use on diet quality, endogenous switching regression model is employed to control for unobserved heterogeneity in the label use decision. It consists of diet quality equations for label users and non-label users, and an equation for the label use decision. Define HEI_i as the observed diet quality, HEI_1 and HEI_0 as the diet quality of label user and non-label user, respectively; I_i^* as a latent variable that determines label use decision; I_i as an indicator variable that equals one if consumer uses nutritional labels and equals zero otherwise; X as a vector of observed characteristics that affect diet quality and Z as vector characteristics that affect label use. The endogenous switching regression model is written as

$$HEI_1 = X'\beta_1 + \varepsilon_1 \qquad (1)$$
$$HEI_0 = X'\beta_0 + \varepsilon_0 \qquad (2)$$
$$I^* = Z'\gamma + u \qquad (3)$$
$$I = 1 \text{ if and only if } I^* > 0, \text{ otherwise } I = 0$$

The observed HEI is defined as $HEI_i = HEI_{1i}$ if and only if $I_i = 1$, $HEI_i = HEI_{0i}$, if and only if $I_i = 0$. The error terms of the above equations, ε_1, ε_0 and μ are assumed to have a trivariate normal distribution. Since the choice of using labels or not is endogenous, the error terms in equation (1) and (2), conditional on the sample selection criterion, have a nonzero expected value. Thus OLS estimates of β are biased. Sample selection corrected Healthy Eating Index equations are specified following Lee (1976):

$$HEI_1 = X'\beta_1 + \sigma_{1u}\phi(Z'\gamma)/\Phi(Z'\gamma) + \upsilon_1 \quad \text{if } I = 1 \qquad (4)$$

$$HEI_0 = X'\beta_0 - \sigma_{0u}\phi(Z'\gamma)/1-\Phi(Z'\gamma) + \upsilon_0 \quad \text{if } I = 0 \qquad (5)$$

where σ_{1u} (σ_{0u}) indicates the covariance between $\varepsilon_1(\varepsilon_0)$and u, the function $\phi(\bullet)$ indicates normal probability distribution, and the function $\Phi(\bullet)$ indicates normal cumulative density. The new residuals, $\upsilon_1 = \varepsilon_1 - \sigma_{1u}$ and $\upsilon_0 = \varepsilon_0 - \sigma_{0u}$ are uncorrelated. The two-step procedure for estimation (4) and (5) involves first calculating the Mill's ratio, $\phi(Z'\gamma)/\Phi(Z'\gamma)$ and $-\phi(Z'\gamma)/1-\Phi(Z'\gamma)$, using probit estimates of (3). The ordinary least squares estimation is used next to estimate (4) and (5). Then, the variance-covariance matrix of two-step estimates is adjusted using the procedure described by Maddala (1983).

Data

Besides the use of the 1994-96 Continuing Survey of Food Intakes by Individuals (CSFII) data for the HEI variable, the 1994-96 Diet and Health Knowledge Survey (DHKS) data, the companion data of the CSFII, also are used in this study. The DHKS includes detailed information about the individual's socioeconomic background and questions on label usage. The empirical work uses DHKS respondent files, providing a sample size of 5405.

The name, definitions, and means for principal variables are exhibited in Table 1. The dependent variables include the Healthy Eating Index (HEI) developed by USDA, and a binary label use variable. The HEI provides a summary measure of people's overall diet quality (Bowman et al., 1998). The mean of HEI score is 63.72 for label users and 58.93 for non-label users. The analysis also is disaggregated by type of information contained on food labels. The five types of information that are presented on the food label are (1) the list of ingredients, (2) the short phrases on the label like "low-fat" or "light" or "good source of fiber"(nutrient content claims), (3) the nutrition

Table 1
Definition of Variables.

	Description	Means	Std.Dev
Dependent Variables			
LBUSE	General use of label (yes=1; no=1)	0.8294	0.3762
HEI	Health Eating Index	62.8991	13.7452
Explanatory Variables			
INCOME	Household income(10,000 dollars)	3.5082	2.6401
INCMSQ	Square of household income	19.2765	26.1452
AGE	Age of respondent (in years)	50.9071	17.1429
AGESQ	Square of age of respondent	2885.3582	1808.1358
MALE	Respondent is male (1=yes; 0=no)	0.5034	0.5000
B_RACE	Respondent is black (1=yes; 0=no)	0.1164	0.3207
O_RACE	Respondent is other nonwhite race (1=yes; 0=no)	0.0633	0.2438
EMPLOYED	Respondent is employed (1=yes; 0=no)	0.5819	0.4933
CITY	Respondent resides in the central city (1=yes; 0=no)	0.2949	0.4560
NOMETRO	Respondent resides in the non-metropolitan (1=yes; 0=no)	0.2666	0.4422
EDUCATION	Schooling in years	12.6459	3.0932
NE	Respondent resides in the Northeast (1=yes; 0=no)	0.1919	0.3938
WE	Respondent resides in the West (1=yes; 0=no)	0.2019	0.4014
MW	Respondent resides in the Midwest (1=yes; 0=no)	0.2514	0.4339
FSP	Participant in the food stamps program (1=yes; 0=no)	0.0788	0.2698
EXERCISING	Respondent has regular exercise (1=yes; 0=no)	0.4846	0.4998
BMI_SP	Body-mass ratio of respondent	27.9155	11.3339
SMOKING	Respondent is smoking now (1=yes; 0=no)	0.2564	0.4367

DHA	Diet-health awareness (index)	5.7937	1.6159
PYRAMID	Knowledge on Food Pyramid Guideline(index)	2.3604	1.2312
SHOPPER	Respondent is major food shopper (1=yes; 0=no)	0.6949	0.4605
SPECDIET	Respondent has special diet (1=yes; 0=no)	0.1741	0.3792
NHSP	Respondent is non-Hispanic (1=yes; 0=no)	0.9221	0.2680

panel that tells the amount of calories, protein, fat, and such in a serving of the food; (4) the information about the size of serving; and (5) the statement on the label that describe health benefits of nutrients or foods (health claims). About 76.4% of the sample used the list of ingredients, 74.2% used the nutrient content claims, 75.4% used the nutrition panel, 67.6% used the serving size, and 67.9% used the health claims. About 82.9 % of the sample used at least one of these information on the label, defined as the general use of label. Binary variables (1=use; 0=not use) are used to capture the decision to use each type of information on the food label.

Independent variables consist of personal or household characteristics, demographic factors, participation in government programs such as the Food Stamp Program, and knowledge about the food guide pyramid. Personal or household characteristics include body mass index, age, gender, level of education, ethnicity, race, exercise status, smoking status, employment status, and special diet status. Other demographic factors include region, urbanization, household size, and income. Consumer's knowledge about the Food Pyramid Guidelines (PYRAMID) is constructed as a measure of diet-health knowledge. The variable measures how much consumers know the servings recommended for the five primary food groups (grains, fruits, vegetables, dairy and meat) in the Food Guide Pyramid. Since PYRAMID reflects the answers to 5 questions, the variable has values ranging from 0 to 5.

The other variables in the label use probit equation are a dummy variable indicating whether the individual is a major shopper or not and a variable reflecting consumer's awareness about the linkage between diet and health (DHA). The variable DHA is constructed following Variyam et al. (1996). The eight questions in the DHKS used to construct the DHA variable take the general form: "Have you heard about any health problems that might be related to being overweight and how much of a particular nutrient (such as fat, fiber, salt, calcium, cholesterol, and sugar) a person eats?". Each answer of "Yes" is given a value of one while each answer of "No" is given a value of zero. Since DHA reflects the answers to 7 questions, the variable has a lower limit of zero and an upper limit of seven.

Empirical Results

Probit Label Use Model

The first stage probit model was estimated for the general label use (The estimated results were omitted because of the limitation of space).[3] Based on the results, there is a nonlinear relationship between income and label use. The probability of label use increases with income until an income level of about $59,800 before it declines with subsequent increases in income. Also, a nonlinear relationship exists between age and general label use. The probability of label use increases until age 44 before declining with subsequent increases in age.

Males are less likely to use labels than females. Results also indicate that education is significantly and positively related to label use. Urbanization and regional differences also are evident in the results. Specifically, individuals who reside in nonmetro areas are less likely to use labels than those who reside in suburban areas. In addition, individuals who reside in the South are less likely to use labels than individuals from other regions. Non-hispanics are less likely to use labels than others. Individuals who are on a special diet are more likely to use labels than individuals who are not on a special diet. Individuals who are more informed about the link between diet and health also are more likely to use nutritional labels. This result is consistent with the argument that poorly informed consumers tend to underestimate the marginal benefit of label use. Major food shoppers are more likely than others to use information on the label when shopping than others. This finding is comforting since a household's major food shopper can potentially influence the quality of the diet of individual household members just from the types of foods he or she decides to purchase.

Heathy Eating Index Models

The second-stage estimates of the endogenous switching-regression model for general label use are exhibited in Table 2. The parameter estimates for education, body mass index, exercise, food stamp participation, and knowledge about the food guide pyramid are statistically significant and have the expected signs in the model for label users. In the model for non label-users, these coefficients are insignificant, but the estimates for age, household income, the level of urbanization (i.e., city), and some regions (i.e., midwest) are statistically significant.

Results based on the general label use model indicate that income is positively related to diet quality (i.e., HEI) of label users. Income is not significant in the non-label user equation. Black label users and non-label users have HEIs that are about three points lower than the HEIs of white label users and non-label users, respectively. Label users of other races, however, have higher HEI than white label users.

Employed label users have a lower HEI than unemployed label users. The reason for this result is not clear. However, it is possible that the diet quality of employed label users is lower because they do not have as much time as the unemployed to spend on food shopping to make the more appropriate decisions regarding the quality of foods they need to buy. Consistent with prior hypothesis, education is positively related to HEI in all label user equations.

Table 2
Parameter Estimates of the HEI Equations

	Label User		Label Non-User	
	Parameters	t-values	Parameters	t-values
Constant	59.2580**	22.592	51.9270**	10.364
INCOME	0.5894*	1.963	1.1210	1.674
INCMSQ	-0.0212	-0.760	-0.0980	-1.514
HHSIZE	-0.1528	-0.927	-0.1614	-1.891
AGE	-0.0399	-0.525	-0.2659	-1.891
AGESQ	0.0019*	2.449	0.0034*	2.533
MALE	0.2982	0.530	-0.9156	-0.709
B_RACE	-3.1097**	-4.639	-3.2132*	2.287
O_RACE	2.8826**	3.116	2.7028	1.272
EMPLOYED	-1.6043**	3.158	-2.1652	1.935
CITY	0.1353	0.281	2.3789*	2.087
NOMETRO	-1.4254*	-2.750	-0.3648	-0.346
EDUCATION	0.3093**	3.205	0.1938	1.078
NE	1.6808**	2.934	3.0121*	2.299
WE	1.7406**	3.008	1.4781	1.142
MW	0.6376	1.205	0.3526**	2.979
NHSP	-1.8547*	-2.174	0.4309	0.218
FSP	-2.9135**	-3.535	-1.7525	-1.127
BMI_SP	-0.0517**	-3.026	0.0873*	2.335
SPECDIET	2.8795**	5.318	3.9822**	2.771
EXERCISE	1.4659**	3.799	0.3537	0.400
SMOKING	-4.3461**	-9.464	-4.4899**	-4.780
PYRAMID	0.5986**	3.681	0.0843	0.248
LAMBDA	-7.6420**	-4.300	-3.6971**	-2.073
N	4483		922	
R^2	0.153		0.171	

* indicates significance at 5% level; ** indicates significance at 1% level

Non-label users from central cities have an HEI that is more than two points higher than non-label users from suburban areas. On the other hand, label users from nonmetro areas have an HEI that is about 1.5 points lower than label users from suburban areas. Regionally, label and non-label users from the northeast have higher HEIs than those from south. Label users from the west and non-label users from midwest also have higher HEI than their counterparts from the south.

Nonhispanic label users have a HEI that is almost two points lower than hispanic label users. More importantly, food stamp participants who are label users have a HEI that is almost three points lower than non-food stamp participants who are label users. This result implies that the food stamp program does not improve the diet quality of participants to the level of non-participants, despite the use of the labels.

Body mass index is negatively related to HEI for label users. As expected, those who are on special diet have higher HEIs than those who are not on a special diet. In addition, label users who regularly exercise have a higher HEI than label users who do not exercise. Smokers, whether label or non-label users, have HEI which are more than four points lower than those of non-smokers. Label users with higher knowledge about the food guide pyramid also have higher HEIs.

Self-selection occurs in both label user and non-label user equations because the Mill's ratios (variable lamda) are all statistically significant. These estimates imply that self-selection bias could have occurred if the endogenous switching model was not employed in the estimation of the equations.

Label Use and Diet Quality Improvements

To evaluate the benefit of label use, we need to consider the total gross benefit for label users. For each label user with characteristics X and Z, we can compare the outcome HEI when using the label, $[E(HEI_1 | I=1)]$ and the expected potential outcome when not using the label, $[E(HEI_0 | I=1)]$. Thus, their current decisions are compared to what they would have been if they had not used the labels. The expected gross benefit in terms of diet quality due to label use is

$$E(HEI_1 | I=1)-E(HEI_0 | I=0) = X'(\beta_1 - \beta_0) + (\sigma_{1u} - \sigma_{0u})\phi(Z'\gamma)/\Phi(Z'\gamma) \qquad (6)$$

The difference in the expected HEIs is calculated for all label users. The sample average of differences are reported in Table 3. The effects of consumer label use on diet quality also are estimated for each of the five types of information on the labels. Consumer label use increases the average expected diet quality by a range of 9.06 and 13.96 points, depending on the type of information. Improvement in the diet is highest when consumers use health benefit statements on the labels.

In terms of the distribution, 54 % of the sample get an improvement of between 5 to 10 points in diet quality, while 39 % get an improvement of 10 to 20 points when using labels (see General Label Use column in Table 3). For the types of information, about three-fourths of the sample get an improvement of 10 to 20 points when using ingredient, health claims, and nutrition panel, while 92 % to 98% of the sample get an improvement of 10 to 20 points when using information concerning serving size or health benefit statement in the label.

Table 3
The Effect of Consumer Label Use on the Diet Quality

Types of information on the label used	General label use	List of Ingredient	Nutrient content claims	Nutrition panel	Serving size	Health claims
Sample average of the difference in the expected HEI	9.06	11.61	11.59	11.51	12.89	13.96
	Distribution of the average of the difference in the expected HEI(%)					
Less than 0	1.43	0.07	0.00	0.12	0.00	0.00
0 to 5	5.44	0.94	0.70	1.33	0.06	0.03
5 to 10	54.34	24.22	21.21	25.02	6.98	1.55
10 to 20	38.79	74.71	78.09	73.51	92.42	98.39
Over 20	0.00	0.05	0.00	0.02	0.00	0.03

Conclusions and Implications

Public concerns about the effect of diet on health have resulted in the legislation of the NLEA. The passage of the NLEA has been expected to provide improvement in the diet quality by encouraging consumers to make healthier food choices. An endogenous switching regression technique is employed to assess the effect of consumer label use on diet quality. The empirical results show that label use, indeed, has a positive effect in improving diet quality.

The key findings in this study are of great importance in terms of public policy because of the tremendous benefits that improved diets can provide the society in general in terms of lives saved and reduction of health care costs. For instance, McNutt (1992) estimated that the health care savings from improved and better diets could amount to $3.6 billion to $21 billion. Zarkin et al (1993) also estimated that the number of discounted life-years that could be gained nationwide during the first 20 years after the implementation of the NLEA ranges from about

40,000 to a high of 1.2 million. USDA also estimates that improved dietary patterns could save $43 billion in medical care costs and lost productivity resulting from disability associated with coronary heart disease, cancer, stroke and diabetes each year, and prevent over 119,900 premature deaths among individuals 55-84 years of age, valued at $28 billion per year (Frazao, 1995). On the other hand, the FDA estimated that the NLEA would cost the food industry $1.4 billion to $2.3 billion and the government $163 million over next 20 years. These estimates, however, are contingent upon the presumption that consumers' diets are improved by their use of food labels.

Appendix

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Endnotes

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More information about the result of estimation is available from the authors upon request.

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The Economic Theory of Consumer Protection in Health Care

Can a neoclassical economic model of consumer protection regulation in health care generate useful tests for improving consumer welfare? Regulation requires consumers to patronize one class of sellers when, in an unregulated market, some consumers would patronize a class of sellers who appear to offer a better price-quality tradeoff. Conditions in health care and characteristics of the neoclassical economic model make it highly unlikely there will be a useful test for a consumer protection effect.

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The Theory of Consumer Protection

The theory of consumer protection regulation in health care uses neoclassical economic principles. Consumers maximize perceived expected utility, which is a function of price and quality of their service. Quality is the probability a service will be safe and effective. Consumers either perceive the price-quality tradeoffs offered by sellers accurately ("accurates") or they perceive those tradeoffs inaccurately ("inaccurates"). Sellers are either in Class I or Class II. In an unregulated market inaccurates patronize Class II sellers, because they inaccurately perceive this class as offering a higher expected utility. Consumers who perceive price-quality tradeoffs accurately always patronize Class I sellers. Class I sellers offer the better price-quality tradeoff to all consumers. Regulation removes Class II sellers from the market, so that inaccurates must patronize Class I sellers. This increases the expected utility of inaccurates, although they may perceive a reduction and they may resist the regulation.

Implications and Tests of the Generative and Minimal Auxiliary Assumptions

Based on the generative assumptions stated above and a minimal set of auxiliary assumptions, the consumer protection theory has a number of implications. The minimal auxiliary assumptions are taken from mainstream neoclassical economic models in the industrial organization literature. Implications include that differences between quality levels are greater than the same differences as perceived by the inaccurates. That is, the inaccurates underestimate many quality differences. As an example, the inaccurates underestimate the difference in quality they receive from Class II sellers in an unregulated market and the quality accurates receive in the same market from Class I sellers. Tests of these implications, however, are unlikely in the context of health care. Testing the implications would require cardinal measures of differences in quality between services, cardinal measures of perceived differences in quality, and comparability of the measures for differences and perceived differences. Tests would also require matching instances with the same service used by consumers with identical preferences over price-quality combinations and identical perceptions of price-quality tradeoffs. Preferences and perceptions are unobserved, and the required matching for these and for service used will be difficult if not impossible. A natural experiment could conceivably allow the researcher to follow a consumer from an unregulated market to a regulated market, so that preferences and perceptions could be assumed constant. For the same consumer to use an identical service in both markets, however, is unlikely. It also is unlikely that the researcher would have longitudinal observations in a natural experiment.

Implications and Tests with Additional Auxiliary Assumptions

Adding auxiliary assumptions about relative prices paid by inaccurates in regulated and unregulated markets or by accurates and inaccurates in an unregulated market gives some advantages. The theory with these auxiliary assumptions gives implications that do not involve comparing differences in qualities with perceived differences in quality. If the auxiliary assumptions about prices are met, the measurement problems are significantly reduced.

As an example, if the accurates pay a higher price in an unregulated market than the inaccruates, there can be a consumer protection effect only if the accurates also receive a higher quality than the inaccurates. This quality difference provides a test for a consumer protection effect of regulation that does not require comparable measures of quality differences and perceived quality differences. Significant problems of controlling for preferences, perceptions and services used remain. In a health care context, tests of the theory remain problematic.

Multivariate Approaches to Testing Implications

Multivariate techniques are a natural recourse for economists to control for (match) unobserved factors, like preferences for price-quality combinations and perceptions of price-quality tradeoffs. Selectivity models that incorporate latent variables as instruments for unobserved factors that vary systematically in the sample seem appropriate. For example, using data from an unregulated market, a latent variable equation for the propensity to choose a class of provider could be an instrument for accuracy of perception. Unfortunately, the estimation problem is very complex. Testing the consumer protection theory would require estimating simultaneously price-quality tradeoffs for different classes of sellers, a latent preference function for seller characteristics, latent perception functions for price-quality tradeoffs and separate choice functions for price and quality. It is unlikely such a system of equations could be identified and estimated in a simultaneous framework.

Conclusion

Can neoclassical economic techniques yield tests for a consumer protection effect of regulation in health care? Specifying the problem carefully and formally shows the answer is, "Only in extremely unlikely circumstances." One difficulty arises from measurement problems with the quality of health care and perceptions of the quality of health care. Another problem is that there are few regulatory changes in health care markets, and there is a slim likelihood of tracking individual consumers over the change in regulatory regimes. Even if many consumers were followed over a regulatory change, it would be necessary to observe the same consumer using the same service under each regulatory regime. Furthermore, some consumers would have to voluntarily switch classes of sellers between regimes. The practical likelihood of an adequate natural experiment is negligible.

A multivariate approach might hold many relevant factors constant across regimes without having to observe a change in regulations. Among multivariate approaches, selectivity models are designed to account for unobserved differences that are systematic across the sample. The accuracy of consumer perceptions is an important unobserved factor in the consumer protection theory, since it is related to selection of provider type in the generative assumptions of the model. The full consumer protection model, however, is a complex system of simultaneous equations. It also may have more than one unobserved factor that is systematically distributed across the sample. It would be difficult, at best, to specify and estimate an appropriate selectivity model.

Endnote

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Impact Evaluation of a Financial Literacy Program: Evidence for Needed Educational Policy Changes

This study examines the impact of a high school financial planning program on a national subsample of students and finds that students increase in financially responsible behaviors, knowledge, and self-efficacy from the time of starting the program to three months after the completion of the program. The need for graduation standards which mandate financial literacy education in high school is addressed.

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Introduction

As state legislators contend with graduation standards, an ongoing debate across the country addresses who is responsible for the financial literacy of our children: families or schools. Rather than working toward a partnership between families and schools, this debate places families and schools in an oppositional relationship assigning responsibility to one or the other, but not both. Meanwhile, many teens approach financial independence without the knowledge and the skills to effectively manage their money. There is at least some initial evidence that indicates that teaching personal finance in schools does have an impact. Adults who grew up in states where personal finance education was mandated in high school are saving 5% more money than their peers; their net worth was also high by roughly a year's worth of earnings (Bernheim, Garrett, & Maki, 1997). The current investigation assesses the impact of a high school financial planning curriculum on the financial knowledge, behavior, and self-efficacy of teens both after completing the course and three months following course completion.

Conceptual Framework

The conceptual framework guiding the current study is provided by the five-tiered approach to evaluation proposed by Francine Jacobs (1988). This five-tiered approach organizes evaluation activities at five levels: the preimplementation tier, the accountability tier, the program clarification tier, the progress toward objectives tier, and the program impact tier. It is a hierarchical approach because as the levels increase, so do the efforts at data collection and tabulation, the precision in program definition, and the commitment to including the evaluation process in programming. The target of the program evaluation for this study was tier five (program impact).

Operating within the framework of assessing impact, this study utilizes both a post-then-pre design and a longitudinal follow-up. Post-then-pre differs from the traditional pretest/posttest design because it corrects for inaccurate reporting of baseline (pretest) data due to limited knowledge of the question content (Rockwell & Kohn, 1989). For example, teens cannot accurately report their knowledge of credit costs if they do not realize that they have a limited amount of information. Retrospective pretests have been found to have greater internal validity than conventional pretest/posttest evaluations (Howard, Ralph, Gulanick, Maxwell, Nance, & Gerber, 1979).

Literature Review

Teen financial behavior reflects what they have learned or not learned within their family systems (Danes, 1994). Recent studies about the financial knowledge of teens indicate that they are transitioning into the adult financial world ill prepared to function efficiently. The Consumer Federation of America and the American Express Company (1991) tested high school seniors nationally and found that teens answered correctly only 42% of 52 questions about banking, auto insurance, housing, cars, credit, and food. The Jumpstart Coalition for Personal Financial Literacy (1997) conducted a national survey of teens who answered questions correctly 57% of the time; questions covered topics such as taxes, retirement, insurance, credit use, inflation, and budgeting. Danes and Hira's

(1987) teen respondents answered 30% to 90% of questions correctly depending on the content of the question: questions on credit cards, insurance, investments, and personal loans received the lowest correct answers.

Marketers have recently discovered the potential purchasing power of teens. Zollo (1995) estimated that teens spent $100 billion in 1994 which he indicated climbed to $103 billion in 1996 (Teenage Research Unlimited, 1997). Teens have three primary sources of income: (a) allowance, (b) employment, (c) gifts as other funds received from parents and relatives. Much of this money is discretionary income, especially if the teen lives at home with their parents (McNeal, 1990). In this environment, the teen experiences "premature affluence" since there are few expense demands on their disposable income (Koehler, Lawroski, Bischoff, 1995). Motivations for teen employment have been driven not by economic need but by a desire for luxuries (O'Neill, 1992).

Description of the Curriculum Being Evaluated

This project evaluates the High School Financial Planning Program® (HSFPP) Curriculum. HSFPP is a collaborative effort between the National Endowment for Financial Education® (NEFE), the United States Department of Agriculture, and the Cooperative State Research, Education, and Extension Service (CSREES). HSFPP acquaints students with basic financial planning concepts and illustrates how these concepts apply to everyday life. It includes an extensive instructor's manual, student workbook, and student personal financial portfolio which are provided free by NEFE. It has seven units and is designed to be completed within several potential time frames ranging from over a quarter or semester to as few as ten classroom hours.

Methods

Sample and Sampling Procedures

The sampling procedures of the evaluation were executed in three phases. **Phase One:** All teachers in the U.S. (1,213) requesting the HSFPP from NEFE at the beginning of the 1997-98 school year were sent a one-page questionnaire asking if they planned to use the curriculum between September 1997 and January 1998 and if they would participate in a national evaluation of the curriculum. University of Wisconsin Research Laboratory collected the data. One follow-up mailing was sent to teachers who did not respond to earlier mailings.

Seven hundred and thirty-eight surveys were returned; 194 (26%) were not using the curriculum and an additional 110 schools indicated that they would be completing the program outside the time window of the evaluation study. Teacher and student evaluations were sent out to the remaining 434 schools (classrooms).

Phase Two: The teacher and student surveys were to be completed at the end of the curriculum use within the classroom setting. Surveys contained knowledge, behavior, and self-efficacy questions designed to mirror the objectives of the curriculum. In total, 434 teachers and 13,119 students were sent questionnaires in this phase of the study. In the end, 188 (43%) of the schools returned the evaluation questionnaires and 4,107 students answered the questions. Responding schools were from all areas of the United States.

Phase Three: For the three-month follow-up, questionnaires and parental consent forms were sent to all students providing addresses on the in-school evaluation forms at Phase 2. Two follow-up mailings were sent to students to obtain as many returns as possible. Four hundred and eighty questionnaires (26%) were returned, although only 418 were usable due to the fact that 62 returned surveys did not contain parental consent forms.

An attrition analysis was conducted to discern whether there were any significant differences between the 418 students providing usable follow-up data and the 3,689 students who did not. Students were compared on all major variables in the in-school survey, and no significant differences were found except that non-respondents save about $4.47 per week more than the 418 students providing follow-up data. The present study is an assessment of the longitudinal impact of the curriculum on those 418 students providing follow-up information.

Sample Description

Almost all students were in high school (99%); 56% were high school seniors. Males comprised 44% of the sample and females the remainder (56%). About 13% of the students originated from urban areas (population over 100,000), while 25% were from communities with populations between 25,000 and 100,000. Approximately 37% were from towns less than 25,000 population. Twenty-one percent lived in the rural area or on farms.

Financial Description

Fifty-six percent of the students had a part-time job. About 6% worked less than 10 hours a week, 25% worked 10 to 15 hours, 29% worked 16 to 20 hours, 26% worked 21 to 30 hours, 11% worked 31 to 40 hours, and 3% worked more than 40 hours a week. The average weekly take-home pay after deductions was $110.00.

Students were asked about financial products and specific high cost items they had in their own name at Phase 2. Sixty-six percent of the students had savings accounts, 41% had a car or truck, 27% had a checking account, 10% had a credit card, 9% had an investment account, 9% had a loan, and 5% owned a motorcycle.

When the students were asked how much was given to them by parents guardians on an "as needed" basis, 23% received no money "as needed." Those who did receive money received $14.00, on average, each week. Twenty-eight percent received an allowance averaging $26 per week.

When asked how much money personally saved each week, 24% of the students said they saved nothing. Those who saved place about $23 in savings per week. About 41% of the students indicated that they had debts or bills to pay; they were asked to include money they owed friends and family as well as creditors outside their immediate family and friends. On average, those students had $670 in debts and bills. When those students indicated they owned a car or truck, the average debt amount was $1,065 compared to an average of $203 for those students without a car or truck. Students spent an average of $36 each week.

Conceptual and Operational Definitions

Students were asked about eight financial management behaviors, three questions about their financial knowledge, and two about their financial self-efficacy both before and after studying the financial planning curriculum. Self-efficacy refers to a feeling of being able to deal effectively with a situation (Bandura, 1977). Self-efficacy issues are critical factors in determining whether people believe they are capable of making changes measured in the evaluation process (Danes, 1991).

Using the "post-then-pre" test method (Rockwell & Kohn, 1989), students were first asked about their financial knowledge, behavior and self-efficacy "at the end of studying financial planning" and then "prior to studying financial planning." A 1-5 Likert scale ranging from almost never (1) to almost always (5) was used to measure abilities both "before" and "after" studying the material. The specific items are listed in Tables 1 and 2. The same financial knowledge, behavior, and self-efficacy questions were asked in the 3-month follow-up.

In the 3-month follow-up, students were asked if and how they changed their spending and saving habits, how they used the money they receive or earn, how they determined how much to save, what large ticket items they purchased since completion of the curriculum, and if and from whom they borrowed money for these purchases. Whether the students made changes in spending and savings habits was first asked through a "yes," "no" question; if changes were reported, they were asked to explain how those habits changed. Finally, they were asked to report the most important thing they had done with their money as a result of studying financial planning.

Analytical Procedures

To assess short-term impact, t-tests were conducted comparing the behavior, knowledge, and self-efficacy items before studying financial planning with these same item reports after studying financial planning. Longer-term impact was examined by conducting t-tests that compared the behavior, knowledge, and self-efficacy scores reported for after program completion with those scores reported in the 3-month follow-up survey.

Findings

Behaviors, Knowledge, and Self-Efficacy Changes

Two behaviors students did the least before participating in HSFPP were writing goals (M = 2.14) and using a spending plan (M = 2.17). Two behaviors performed the most were repaying debts and comparing prices; the mean for these behaviors is representative of the category of "About Half the Time." Within the response of "Almost Always," 40.2% of the students indicated that they "almost always repay the money they owe on time."

Before participating in the HSFPP, the knowledge level was comparatively low on the cost of buying on credit, shopping for auto insurance and investments. About a third of the students indicated that they "almost always" believed the way they managed their money would affect their future and about a fifth "almost always" felt confident about making decisions that dealt with money.

Students were asked the same questions after participating in the HSFPP. There was a statistically significant increase on all behavior, knowledge and self-efficacy questions at the .001 level (Table 1). The knowledge and self-efficacy questions increased dramatically. The pattern in means among the behaviors was similar, although higher in every case.

Table 1
Frequencies of Financial Behaviors, Knowledge, and Self-Efficacy After Participating in HSFPP

Financial Questions	Percentage					Mean	
	Almost Never	Seldom	About Half the Time	Often	Almost Always	After	Before
Behaviors							
I track some or all of my expenses	12.3	21.7	28.0	25.1	13.0	3.05*	2.63
I compare prices when I shop	7.0	10.3	28.1	29.0	25.7	3.56*	3.29
I set aside money for future needs/wants	7.2	14.2	26.0	29.1	23.6	3.48*	3.09
I use a spending plan/budget	28.5	27.6	24.2	13.9	5.8	2.41*	2.17
I repay the money I owe on time	3.6	3.4	13.1	30.4	49.4	4.18*	3.77
I write goals for managing my money	28.2	21.8	25.2	16.5	8.3	2.55*	2.14
I generally achieve my money management goals	11.5	15.6	29.8	26.4	16.6	3.21*	2.85
I discuss money management with my family	23.4	18.8	22.9	24.3	10.6	2.80*	2.46
Knowledge							
I know the cost of buying on credit	19.2	12.3	17.2	25.1	26.3	3.27*	2.42
I know key questions to ask when shopping for auto insurance	20.4	19.7	21.6	24.8	13.6	2.92*	2.27
I know about investments (stocks, mutual funds, bonds, etc.)	15.9	17.8	26.4	25.7	14.2	3.05*	2.29
Self-Efficacy							
I believe the way I manage my money will affect my future	3.9	3.6	12.0	24.8	55.7	4.25*	3.70
I feel confident about making decisions that deal with money	3.8	5.0	24.5	34.6	32.0	3.86*	3.23

*Indicates that the difference in mean score after participating in HSFPP was higher and that the t-score for the difference was statistically significant at the .001 level.

Three-month Follow-up

Three months after participating in HSFPP, the mean scores for all of the financial questions increased significantly compared to immediately having completed the course (Table 2). Greater percentages of students reported that they "almost always" compare prices when shopping (44.5%), set money aside for future needs or wants (40.5%), and repay the money they owe on time (60%). In the follow-up, 44% of students reported "almost always" knowing the cost of buying on credit. Finally, about 77 percent of the students reported that they "almost always" felt as though the way they managed their money would affect their future.

Changes in Spending and Savings Habits

Three months after participating in the HSFPP, over half of the students reported a change in both spending (58%) and savings (56%) habits. Of the students reporting changes in spending, 26% now think more carefully about their spending. Another 23% now save money for purchases. The remaining half of students reported changes such as only buying needed items, using a budget, comparing prices, and spending less. Of the students reporting changes in savings, 39% reported that they had started saving money 3 months after completing HSFPP. Twenty-seven percent now save more than before. The remaining students reported changes in savings behavior such as saving for future needs, spending less money, and shopping more carefully.

Table 2

Frequencies of Financial Behaviors, Knowledge, and Self-Efficacy Three Months After Participating in HSFPP

Financial Questions	Percentage Almost Never	Seldom	About Half the Time	Often	Almost Always	Mean
Behaviors						
I track some or all of my expenses	4.6	9.9	22.5	34.4	28.6	3.73*
I compare prices when I shop	1.2	6.9	16.5	30.9	44.5	4.12*
I set aside money for future needs wants	2.6	9.4	17.8	29.7	40.5	3.96*
I use a spending plan budget	14.0	20.7	27.2	23.4	14.7	3.04*
I repay the money I owe on time	0.7	1.7	11.1	26.5	60.0	4.43*
I write goals for managing my money	14.2	24.1	26.8	18.8	16.1	2.99*
I generally achieve my money management goals	4.3	12.5	25.1	36.5	21.6	3.59*
I discuss my money management with my family	15.1	13.0	20.4	28.4	23.1	3.31*
Knowledge						
I know the cost of buying on credit	7.2	7.5	16.1	25.7	43.5	3.91*
I know key questions to ask when shopping for auto insurance	12.5	15.1	23.0	28.8	20.6	3.40*
I know about investments (stocks, mutual funds, bonds, etc.)	9.1	13.7	20.3	33.6	23.3	3.48*
Self-Efficacy						
I believe the way I manage my money will affect my future	1.4	2.2	4.0	15.6	76.8	4.64*
I feel confident about making decisions that deal with money	0.7	2.2	13.4	36.0	47.7	4.28*

*Indicates that the difference in mean score three months after participating in HSFPP was higher than at the completion of the class and the t-score was statistically significant at the .001 level.

Asset Changes

Students were asked about purchases made since participating in HSFPP. Three months later 25% had purchased a stereo/cd player. Sixteen percent had purchased a beeper and 7% had purchased a cellular phone. Eleven percent had purchased a car or truck and 1% had bought a motorcycle. Six percent bought a computer.

Most Important Thing Done Resulting From Studying HSFPP

Nearly one third of students (31%) reported that the most important financial planning activity they had taken on since participating in the HSFPP was establishing a savings account. Saving for major expenses and purchases was reported by 14% as the most important thing they had done, while another 14% reported saving for a future want or need. Others identified activities were paying for one's own expenses, comparing prices and spending less when shopping, budgeting and planning, learning how to save, investing, and helping family.

Discussion

The results of this study indicate that teaching personal finance in high schools can positively impact the financial knowledge, behavior, and self-efficacy levels of teens. These findings support research suggesting that teaching personal finance in schools has an impact on financial management practices as adults (Bernheim et al., 1997). As students enter financial independence, they encounter an increasingly complex marketplace, earnings do not meet spending goals, and easy access to credit places young adults at risk for future financial instability.

Education within the high school setting can better prepare youth to successfully meet these challenges while bringing financial education concepts home to be discussed with family.

Teen financial literacy needs to be made a priority on the education policy agenda. Currently only 26 states mandate consumer education and only 14 require a personal finance component (Bernheim et al., 1997). As many states are currently developing graduation standards, these are ideal times to make a difference in the lives of future youth as they launch into adulthood. One of the goals of education is to prepare youth to be employable citizens, preparing them to use the income they earn from that employment should be an equally high priority.

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Rehabilitating the Agreement Rate as the Best Measure of Interjudge Replicability

Much data used in consumer research is created by subjective classification of text or other qualitative material. The extent to which two or more judges, acting independently, agree in classifying the qualitative material is regarded as a measure of the quality of the classification scheme and the resulting data. This presentation discusses how the agreement rate between judges is the best measure of the extent to which the data show interjudge replicability.

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Interjudge Replicability and the Quality of Data

The quality of data is one of the most important issues in any research endeavor. Judges often create data for consumer research by classifying text or other qualitative material into categories. For instance, advertisements may be classified as informational or emotive. Consumer comments may be classified from highly unfavorable to highly favorable. The extent to which different judges, acting independently, agree on the classifications is widely regarded as an indication of the "quality" of the classification process and the data. Exactly what types of validity or reliability constitute quality of the process and the data is not important in this discussion. The issue addressed here is finding a measure of how much interjudge replicability the classifications show and testing whether the replicability is enough to regard the data as a good basis for analysis. Only nominal data are considered here, and the presentation is confined to two judges. The same analysis and technique can be extended to ordinal data and to multiple judges.

A Good Measure of Replicability

The following describes a good measure of replicability: (1) A measure that is easier to compute is better; (2) A measure for which tests of statistical significance are easier to compute is better; (3) A measure with valid statistical tests for "enough" evidence of replicability is better than one for which no statistical test is available or one where the available tests are based on assumptions of doubtful validity; (4) A measure which requires less complicated theoretical or conceptual justification is better (Ockham's Razor); (5) A measure which uses more familiar statistical concepts and calculations is better; (6) A measure that accounts for the agreement between judges that would be expected by chance is better than one that does not.

The properties above characterize a measure of replicability that is intuitively meaningful, readily accessible to many users and readily understandable to many readers. A good measure of replicability also should rely on an interpretation of "chance" that is intuitively related to the issue of quality of the classification process and rigorously related to tests for enough improvement over chance. The following definition of chance provides the required properties:

For each judge there is a uniform probability distribution of classification across the k categories. This is the most intuitive and simplest definition of chance in the absence of any exogenous information indicating a known distribution for a judge. If the classification process had no quality, all judges would presumably be reduced to assigning units to categories randomly with equal likelihood of any category. With k categories, the proportion of observations on which agreement is expected by chance is 1/k, or

$$p_c = 1/k. \qquad (1)$$

The Agreement Rate: Problems and Rehabilitation

If there are 100 units of observation, and each of two judges classifies each unit into one of four categories, there are 200 classifications. Each unit has a category from judge one and a category from judge two. The observed agreement rate, p_o, is the proportion of units where the judges choose the same category.

If the judges arrive at the same category for 75 of the 100 units, $p_o = .75$. The agreement rate is easy to calculate and its interpretation is intuitive.

The agreement rate alone, however, meets none of the other criteria for a good measure of replicability. Alone, p_o implies no null hypothesis to define "enough" evidence of replicability. Alone, p_o does not account for the agreement among judges that would be expected by chance. For instance, if there are two categories, 50 percent agreement would be expected if each judge were flipping a coin. In this case, 75 percent agreement is not impressive. If there were four categories, expected agreement by chance would be 25 percent. Against this expectation, 75 percent agreement is more impressive evidence for replicability. If ρ is the true population agreement rate between judges, the binomial distribution can be used to test the hypothesis $\rho \leq 1/k$. This is a test of the null hypothesis that the population agreement rate is less than or equal to the agreement expected by chance. The consensus among researchers, however, is that this is a trivial null hypothesis.

In response to the deficiencies of the agreement rate, many measures of interjudge replicability have been developed. All of them, however, lack the intuitive meaning of the agreement rate. They all have problems of complexity, missing tests for enough replicability or tests with doubtful validity.

To rehabilitate the agreement rate, the first step is to define enough agreement over chance. If the agreement expected by chance is 1/k, the potential improvement over chance is (1-(1/k)). Let β be any subjectively chosen fraction such that $0 \leq \beta \leq 1$, and the required agreement is

$$p_c^+ = p_c + \beta(1-(1/k)). \qquad (2)$$

If $\beta = .5$, enough agreement is defined as that expected by chance plus 50% of the potential improvement over chance. The null hypothesis that accounts for an acceptable level of agreement over that expected by chance is

$$\rho \leq p_c^+ \qquad (3)$$

Judge one classifies each of N units into one of the k categories. Acting independently, judge two classifies each unit. According to the null hypothesis, the probability of agreement remains constant at p_c^+ over all units. Thus, agreement follows a Bernoulli process with probability of success on any unit p_c^+. This null hypothesis can be tested using the binomial distribution. Using the binomial distribution for N trials with probability of success p_c^+, the researcher finds the probability of the observed agreement rate, p_o or higher. This probability is compared to a significance level selected *ex ante*, denoted α. If the probability is less than or equal α, the researcher rejects the null hypothesis and concludes there is sufficient agreement to justify confidence in the data.

For instance, for $N=100$, $p_o = .75$, $k=2$, $\beta = .5$, and $\alpha = .05$, $p_c^+ = .75$, and the binomial probability is 0.553. Seventy-five percent observed agreement is not enough to conclude the population agreement rate captures at least half the potential improvement over chance. However, if the classification scheme has four categories ($k = 4$), $p_c^+ = .625$, and the binomial probability of 75% or better agreement is 0.006. In the case of four categories, observing 75% agreement is sufficient to reject the null hypothesis. The evidence supports a population agreement rate at least that expected by chance plus half the potential improvement over chance.

A researcher can force a finding of sufficient agreement over that expected by chance. Adding artificial categories to the classification scheme would increase k and reduce the observed agreement that would reject the null hypothesis for given N, α, and β. Such manipulation would be apparent in the definition of the artificial categories and the low frequencies with which those categories would be chosen.

Conclusion

Data created by subjective classifications of text and other subjective items into categories are often used in consumer research. An important question is whether the classification methods and the resulting data reflect sufficient agreement among judges to be used with confidence. The agreement rate between judges is the most obvious and intuitive measure of interjudge replicability, but the agreement rate alone has many deficiencies. The procedure presented here achieves all the desirable characteristics of a measure of interjudge replicability. It provides a test for enough replicability, while keeping the intuition of the agreement rate and requiring only easy and familiar computations.

Endnote

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Developing a Model for the Determinants of Financial Satisfaction: An Exploratory Study

A model for understanding the determinants of financial satisfaction that can be used in helping improve consumers' quality of life is presented in this paper. Using a random sample of white-collar clerical workers, this study proposed an exploratory model for the determinants of financial satisfaction. Indirect as well as direct effects on financial satisfaction have been identified using path analysis. Implications and recommendations for consumer and family economists are drawn from the findings.

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Over the past 20 years a great deal of theoretical work has been devoted to the conceptualization and measurement of personal financial well-being, which is defined to include an individual's satisfaction with their present financial situation. Researchers such as Hayhoe (1990), Porter and Garman (1993), Strumpel (1976), and Wilhelm and Varcoe (1991) have suggested that a model to explain and predict personal financial satisfaction is needed within the broad context of consumer and family economics. Researchers and educators have argued that a conceptual model of the determinants of financial satisfaction is needed because it is becoming increasingly difficult to fulfill the mission of the consumer sciences profession, namely, the enhancement of the quality of life of individuals and families within society, without a better understanding of the factors that influence financial satisfaction.

For instance, Porter and Garman (1993) documented a need for a conceptual model that could be used to guide research within the domain of financial satisfaction. They suggested that such a model be multidimensional by including objective, subjective, and reference-point measures. Porter and Garman also pointed out that such a model had yet to be concurrently developed and accepted by researchers in the field. Little has changed since this insight was originally documented.

The purpose of this paper is to present the findings of an exploratory study that was designed to identify the determinants of financial satisfaction. An exploratory model of financial satisfaction is presented. It is hoped that the model presented in this paper will lead to a better understanding of the relationships between and among determinants of financial satisfaction of individuals.

Review of Literature

The terms financial well-being and financial satisfaction are often used interchangeably (Joo, 1998). Williams (1983) theorized well-being as a function of material and non-material aspects of one's financial situation, including objective and subjective measures. In general, financial satisfaction includes contentment with one's material (objective) and non-material (subjective) financial situation.

Over the past two decades consumer and family sciences researchers have attempted to model the determinants of financial satisfaction using diverse research methods (e.g., Hayhoe, 1990; Joo, 1998; Porter & Garman, 1993; Wilhelm & Varcoe, 1991; Williams, 1993). However, few attempts to examine the determinants of financial satisfaction have incorporated objective, subjective, and behavioral measures into a single empirical test of individual financial satisfaction. Specifically, previous financial satisfaction research has failed to take into account objective scales of economic status, subjective perceptions of personal finance, behavioral assessments of personal financial management, overall satisfaction with a particular financial situation, and financial solvency within a single model.

Theoretical Determinants of Financial Satisfaction

A number of factors have been found to influence financial satisfaction. Among the most common factors are demographic characteristics, such as gender, marital status, education, ethnicity, age, income, and home ownership (Joo, 1998; O'Neill, 1995; Porter & Garman, 1993). For example, it has been confirmed that financial satisfaction is positively related to income, education, and age. Financial stressors also are commonly assumed to influence financial satisfaction. Financial stressors are generally defined as life events that impact a family unit which produce changes in a family social system (McCubbin & Patterson, 1983).

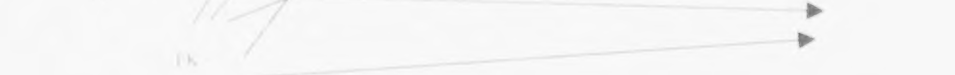
Financial behaviors can also affect financial satisfaction. Personal financial solvency also has been used to assess financial satisfaction (e.g., DeVaney & Lytton, 1995; Joo, 1998). Additionally, researchers have argued that financial attitudes and knowledge play an important role in determining a person's financial satisfaction (Joo, 1998; Porter & Garman, 1993). Grable and Lytton (1998) and Sung and Hanna (1996) concluded that there appears to be a common psychological profile among risk tolerant individuals and those with more financial knowledge that allows them to make different financial decisions, which often lead to greater attained levels of financial satisfaction.

While the literature suggests that demographics, financial behaviors, financial solvency, financial risk tolerance, financial knowledge, financial stressors, overall stress levels, and financial stress levels impact on financial satisfaction, results from previous studies have not been consistent in their findings. Much of the past inconsistency appears to be the result of misspecification of measurements and the assumption that each determinant factor has a direct influence on financial satisfaction (e.g., see Porter & Garman, 1993). This assumption may, in fact, be incorrect. Joo (1998) suggested that in many cases demographics, financial stressors, and financial behaviors, have an indirect effect on financial satisfaction which has not been tested for in previous studies.

Model

It is reasonable to hypothesize that indirect effects, as well as direct effects, on financial satisfaction may exist. The exploratory model (figure 1) shows that demographic characteristics such as, age, education, income, ethnicity, home ownership, number of financial dependents, marital status, and gender directly affect financial satisfaction. Financial stressors, financial knowledge, financial behavior, risk tolerance, objective economic status, such as financial solvency, and the level of financial stress also have direct effects on financial satisfaction.

Additional indirect effects also exist. For example, financial stress can be affected by financial stressors, demographic variables, financial knowledge, financial behavior, and financial solvency. It is logical to assume that individuals who experience many financially stressful events may also have higher levels of financial stress. Similarly, certain demographic variables, such as the number of financial dependents, marital status, and income can have an impact on financial stress levels. A person's economic condition, measured by a solvency ratio, financial knowledge, and financial behaviors can also be assumed to have impacts on financial stress levels. Therefore, the indirect effects of demographic characteristics, financial stressors, financial knowledge, financial behavior, and financial solvency, through a financial stress level, on financial satisfaction, are presented in the exploratory model.



MS = Marital Status
FD = Number of Financial Dependents
HO = Homeownership
FS = Financial Stressors
FK = Financial Knowledge
FB = Financial Behavior
FSL = Financial Stress Level

Figure 1
The Determinants of Financial Satisfaction

Financial risk tolerance is another factor that can be affected by demographic characteristics, financial stressors, and financial knowledge. Financial solvency can be affected by demographic characteristics and financial stressors. Financial behavior can be affected by demographic characteristics, financial stressors, financial knowledge, and risk tolerance.

The exploratory model (Figure 1) incorporates all of the direct effects from demographic characteristics, financial stressors, financial knowledge, financial solvency, risk tolerance, financial behavior, and financial stress levels, and all of the possible indirect effects of these variables. Thus, the determinants of financial satisfaction can be more fully understood by taking into account these direct and indirect effects.

Methodology

A survey was undertaken in order to examine the robustness of the exploratory model by testing the determinants of financial satisfaction. A mail survey (N = 500) of white-collar clerical workers was conducted during September and October of 1998. The sample was drawn from an employee directory. Clerical workers were delimited to the workers who held a job title as secretary, business manager, administrative assistant, technician, accounting clerk, clerical specialist, or administrative secretary. From the random sample, the first 143 questionnaires were analyzed for this exploratory study.

Data Analysis

An analysis was conducted using SPSS for Windows. Correlation and path analysis were used to test the determinants of financial satisfaction. Path analysis was used because the model specifies indirect as well as direct effects of independent variables on the dependent variable.

Dependent Variable

Respondents' satisfaction with their personal financial situation was measured with a 10-point stair-step question. Respondents were asked to mark how satisfied they were with their present financial situation. Those who were not satisfied ended up towards the lower steps, while those who were more satisfied tended towards the higher steps. Over one-half of the respondents (58.0%) reported their satisfaction as 1 to 4 (below the average level). About two-tenths (20.2%) reported about the average (steps 5 and 6), while the remainder (21.7%) reported high levels of satisfaction (steps 7, 8, 9, and 10).

Independent Variables

A total of eight demographic variables were examined. Age and number of financial dependents were measured as continuous variables. Household income was measured categorically but considered as interval. In the analysis, gender, marital status, education ethnicity, and home ownership were dummy coded. Respondents were coded 1, if the respondent was female, married, white, had above bachelor's degree, or home owner.

Other independent variables included financial knowledge, financial stressors, financial stress level, risk tolerance, financial behavior, and financial solvency. Respondent's self assessed financial knowledge level was examined by asking "how would you rate your financial knowledge level?" More than one-third (36.4%) of the respondents rated their financial knowledge level above average, 35.7% rated themselves as about the average, and 28% rated themselves as below average.

Respondents were also asked about the number of financially stressful events that they experienced during the past year. Approximately one-tenth (10.5%) of the respondents had not experienced a financially stressful event. Among the remaining 128 respondents, about three-tenths (28.9%) of the respondents experienced two financial stressors, and about one-quarter (26.6%) experienced one financial stressor. The average number of financial stressors for respondents who experienced a financial stressor was 2.74. The overall financial stress level of respondents was measured with one 10-point Likert-type question. About one-third (32.3%) reported medium levels of financial stress, about one-quarter (25.9%) reported low levels of financial stress, and 42.0% of the respondents indicated that their financial stress level was above average.

Respondents' risk tolerance was measure with six 4-point Likert-type questions. An index, based on these items, was found to be reliable (Cronbach alpha = .77). Possible risk tolerance scores ranged from 6 to 24 (with higher scores representing higher levels of financial risk tolerance). The average risk tolerance score was 12.9.

Respondents' financial behavior was examined using ten 4-point Likert-type questions used by Joo (1998). The index, based on these items, was reliable (Cronbach alpha = .83). The average financial behavior score for respondents was 27.3. A question was adopted from previous research (Joo, 1998; Porter & Garman, 1993) to measure financial solvency. Financial solvency levels were measured by asking "Suppose you were to sell all of your major possessions, turn all of your investments and other assets into cash, and pay all of your debts. Would you be in debt, break even, or have something left over?" Respondents who would be in serious debt marked 1 and respondents who would have money left over marked 5. More than one-tenths (16.8%) of the respondents reported that they would be in debt and about two-tenths (23.1%) reported they would break even. The majority of the respondents (60.1%) reported that they would have money left over.

Demographic Characteristics of the Respondents

The majority of the respondents were female (89.5%), while 10.5% of the respondents were male. The mean age was 43 years old. The majority of the respondents (83.9%) had a beyond high school education (e.g., trade/vocational training, associates', some college, bachelors, and graduate). The majority of the respondents (83.0%) had household income of less than $50,000. The average income was $35,000. About two-thirds (66.4%) were married. About three-quarters (77.6%) were white, while Hispanic, and African American made up most of the remainder (22.4%). The average number of financial dependents was 2.63. And finally, over two-thirds (69.2%) were home owners. The sample was representative of U.S. white-collar clerical workers (U.S. Department of Commerce, 1992).

Results and Discussion

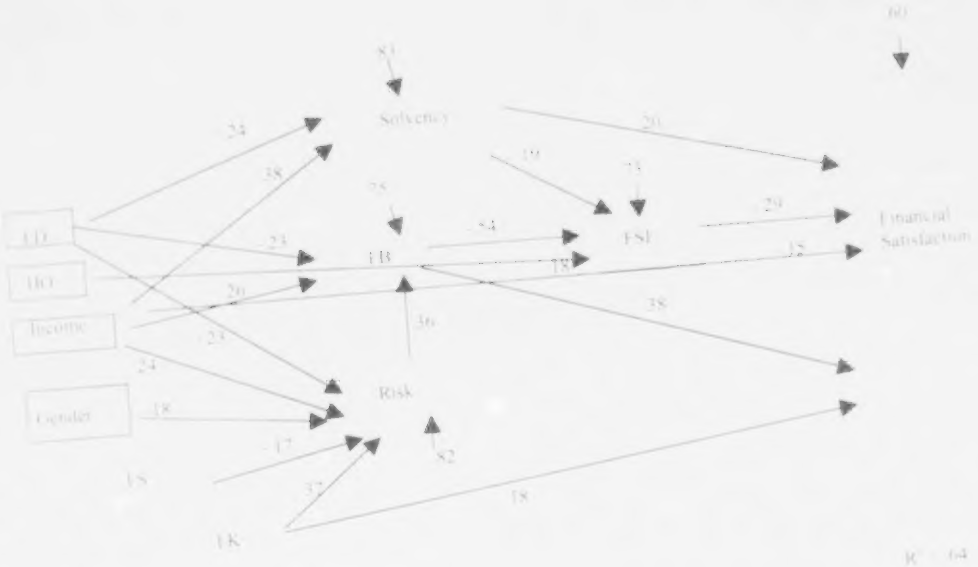
Correlations were examined to check for possible multicollinearity problems among the independent variables. No such problems were identified. Results of the path analysis are shown in Figure 2. Income, financial knowledge, financial solvency, financial behavior, and financial stress levels were shown to have direct effects on financial satisfaction. Higher levels of income, financial knowledge, solvency, and financial behaviors lead to higher levels of financial satisfaction. Financial stress levels and financial satisfaction had a direct negative relationship. Financial stress levels were influenced by home ownership, the financial solvency, and financial behaviors. Financial behaviors were influenced by the number of financial dependents, income, and risk tolerance. The solvency ratio was influenced by the number of financial dependents and home ownership. Finally, risk tolerance was influenced by the number of financial dependents, home ownership, income, gender, and financial knowledge. The path analysis indicated indirect effects from home ownership, the number of financial dependents, gender, and risk tolerance on financial satisfaction. No effect was found from age, education, marital status, or ethnicity.

The summary of direct, indirect, and total effects is presented in Table 1. As shown in Table 1, the single most powerful determinant of financial satisfaction was an individual's financial behavior. Financial practices exhibited by individuals (e.g., cash management, credit management, budgeting, financial planning, and general money management) had the largest impact when determining an individual's financial satisfaction level. This finding suggests that those who exhibit desirable financial behaviors tend to be more satisfied with their personal financial situation. This indicates that if educators, researchers, and practitioners can help to improve a person's financial behaviors, this may lead to higher levels of financial satisfaction.

The second most powerful determinant of financial satisfaction was household income. However, note that the indirect effect was higher than the direct effect. This result supports the general consensus among financial counselors that "money cannot buy well-being." In other words, income, by itself, is not as powerful of a determinant as a person's financial behaviors, stress, knowledge, financial solvency, or other attitudes. Income only becomes a powerful determinant of financial satisfaction when the indirect effects are accounted for through other significant variables.

Financial stress level was the third most powerful determinant. The direct impact of financial stress level outweighed the direct effect of income. The strong relationship between financial stress level and satisfaction is an anticipated outcome of this research. For example, those who experienced higher levels of financial stress tended to be less satisfied with their personal financial situation than others.

Other important determinants of financial satisfaction included: (a) financial knowledge, (b) financial solvency, (c) the number of financial dependents, (d) risk tolerance, (e) home ownership, (f) gender, and (g) financial stressors. As theory would suggest, financial knowledge, financial solvency, risk tolerance, and home ownership had positive effects on financial satisfaction. The number of financial dependents and financial stressors had negative effects on financial satisfaction.



FD = Number of Financial Dependents
FK = Financial Knowledge
HO = Home ownership
FB = Financial Behavior
FS = Financial Stressors
FSL = Financial Stress Level

Figure 2
Path Analysis Results of the Determinants of Financial Satisfaction

Table 1
Direct, Indirect, and Total Effects of the Independent Variables on Financial Satisfaction

Variables	Direct Effects	Indirect Effects	Total Effects
Age	0	0	0
Education	0	0	0
Gender	0	-.04	.04
Home Ownership	0	.05	.05
Income	.15	.19	.34
Marital Status	0	0	0
Financial Dependents	0	-.23	-.23
Ethnicity	0	0	0
Financial Stressors	0	-.03	-.03
Financial Stress Level	.29	0	.29
Financial Knowledge	.18	.07	.25
Solvency Measure	.20	.05	.25
Risk Tolerance	0	.20	.20
Financial Behavior	.39	.16	.55

Implications and Recommendations

This research revealed an exploratory path model of the determinants of financial satisfaction. Using the proposed path model, researchers can identify factors that impact on personal financial satisfaction. Research results led to the identification of indirect effects as well as direct effects on personal financial satisfaction. Determining factors that impact on personal financial satisfaction included financial behaviors, income, financial stress level, financial knowledge, financial solvency, the number of financial dependents, risk tolerance, home ownership. Variables that were not significant determinants included: age, education, marital gender, and financial stressors.

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status, and ethnicity. This finding is significantly different from results presented in previous studies which suggest that demographics have a direct effect on financial satisfaction, whereas results from this analysis indicate that demographics most likely influence financial satisfaction indirectly. Consumer and family economists can use the findings of this exploratory study, especially the empirically tested model in Figure 2, as a guide for increasing the financial satisfaction of their constituencies.

Based on the exploratory nature of this study, the following is recommended for future research. First, replications of the study using different samples are needed. Second, further critique and development of the model is encouraged. Only in this way, can consumer and family economists obtain a better theoretical and practical understanding of the determinants of financial satisfaction.

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Endnotes

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Income Changes Experienced by Rural Hoosiers with HIV/AIDS: A Preliminary View

Preliminary evaluation of a rural sample of HIV and AIDS patients is presented. Statistically significant changes in household income, personal income, and personal assets were noted.

Mary Ellen Rider, University of Nebraska-Lincoln[1]

Background

Human Immunodeficiency Virus (HIV) and its last stage, acquired immune deficiency syndrome (AIDS), is a chronic illness with catastrophic financial implications for consumers, businesses, and government. Since AIDS was identified in 1983, research has enabled employers and medical care providers to estimate their financial risks when caring for employees or patients. Consumers (patients and their nucleus of support) have little similar information. Both baseline and comparable data are needed to guide health, financial, legal and education professionals and the HIV infected persons that they assist in coping financially with this catastrophic illness. Similarly, a broader base of information would enable policy makers to determine government benefit levels for chronically ill persons including HIV-infected persons. State based data for such decisions becomes more important as federally mandated programs revert to the states. The purpose of the poster session was to examine the changes in income experienced by rural Hoosier HIV/AIDS patients.

Methodology

Data were collected between January and April 1994 from residents of rural counties with populations of less than 25,000. Clients of the Indiana Community AIDS Action Network (ICAAN) living in such counties were randomly selected and asked via post card to participate in the study. One hundred thirty-two surveys were mailed. Forty-eight usable responses were received and analyzed. Specific research questions for the poster presentation were:

1. Do rural Hoosier patients experience changes in income level as a result of HIV/AIDS infection?
2. What is the relationship between income, assets, and debts for persons and their household impacted by HIV/AIDS?

Findings and Conclusions

The sample of rural Hoosier HIV+ (37.5%) and AIDS (62.5%) adult patients can be described as male (89.5%), Caucasian (87.8%), and young (83.4% between ages of 18 and 39). Rural Hoosier patients sampled experienced significant changes in household income (Mean = -\$7,717; $p \geq .05$), personal income (Mean = -\$ 10,111; $p \geq .05$), and personal assets (mean = -\$9,801; $p \geq .05$). Change in household income pre- to post-infection was significantly related to changes in personal income, household assets, and personal assets. Change in personal income pre- to post-infection was significantly related to changes in personal assets and personal debt. Change in household assets was significantly related to change in personal assets, personal debt, and household debt. Change in personal assets was significantly related to changes in personal and household debt. Change in personal debt was significantly related to change in household debt.

Further research needs to occur to determine if these Rural Hoosiers used assets to pay debts or whether bankruptcy was involved in the reduction of debt and assets. The relationships of other variables, particularly changes in residence (urban to rural nonfarm or rural small town) or household makeup (staying with partner or moving in with family of origin), to the financial variables should be evaluated to determine the exact nature of the relationships between changes in assets and debts.

Endnote

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Assisted Living Facilities: Consumer Decision Making and Satisfaction

Focus groups were held with residents of Assisted Living Facilities (ALF) to discuss the decision making process of moving and subsequent satisfaction with living in an ALF. Responses will guide research on helping the elderly and family members plan for changes in health care of the elderly.

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Aimee Prawitz[2], Northern Illinois University
Susan Bowers[3], Northern Illinois University

Assisted living facilities (ALFs) offer a special combination of housing, supportive services, personalized assistance, and health care designed for those who need help with activities of daily living and instrumental activities of daily living. ALFs are growing rapidly and their growth is of great interest. ALFs are privately funded and largely unregulated. AARP and five other organizations have drawn up a set of quality initiatives that contain minimum standard guidelines. Currently about 16 states are attempting to establish or change assisted living regulations.

The entry-level requirements of the two institutions where focus groups were held were similar. The residents must be sufficiently mobile to get around in their rooms and to go to the dining area. Residents should be cognitively intact, although the directors acknowledged that there might be some cognitive impairment. For example, in the focus groups, several residents commented that they needed help in remembering to take their medications.

Overall, residents were satisfied with the care, the quality of meals, and being with others, especially at mealtime. A majority did not have family nearby. Many residents commented that the ALF made special arrangements for them when family members came, such as a birthday cake, a special meal or their own table in the dining room.

The conditions under which residents moved into the ALF varied. Some selected the ALF on their own, in some instances, a family member suggested the ALF. A few moved to the ALF from a hospital or nursing home. If residents had arrived when they were in poor health and unable to make their own decision, they seemed to be less satisfied in the beginning about the move. As time passed, they realized that it was the right decision, but they were still slightly resentful about the move without their permission.

Each ALF included a nursing home or wing for nursing home residents. When asked what they would do if their health deteriorated, residents replied that they would be able to move to the "other side". In effect, a commitment was made when they moved in, that they would not be dismissed. The commitment for continuity in living arrangements seemed to provide residents with peace of mind.

The residents had private apartments consisting of one or two rooms. Residents were pleased that fees were due on a monthly basis instead of an annual basis. When asked about communicating with family members about finances, about half said they spoke freely with their families while about half indicated that they would "tell their family members what they need to know when the time comes". The inability to communicate with family members about finances suggests that any discussion would need to be initiated by the family members. Additional research is needed to determine the factors that would enable residents to communicate openly.

Endnotes

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Health Insurance Expenditures of Older Americans

In the wake of changes in Medicare, the social insurance program that finances health care for the nation's elderly, individuals over age 65 face higher out-of-pocket expenses for medical care. Purchase of insurance is one means of dealing with these costs. This study uses data from the 1996 Consumer Expenditure Survey to examine the health insurance expenditures of individuals aged 65 and older.

Deanna L. Sharpe, University of Missouri[1]

Introduction

Health care costs have risen dramatically. Between 1989 and 1994, the medical care price index rose 41.3% compared to an increase of 18.2% for all items less medical care (Paulin & Dietz, 1995). Health insurance is an important resource for meeting these costs. For those aged 65 and older, Medicare usually replaces employer-based health insurance. Under the Balanced Budget Act of 1997, Medicare beneficiaries face new options for meeting medical costs and may pay higher out-of-pocket costs as dollar coverage under Medicare changes (Consumer Reports, 1998). In the first quarter of 1996, the Consumer Expenditure Survey obtained more detailed information about types of health insurance expenditures. This descriptive study uses these data to examine (1) the characteristics of those over age 64 (2) the percentage of those over age 64 that hold various types of health insurance coverage and (3) the average dollar amount spent during the calendar quarter surveyed on those various types of health insurance. Findings give a benchmark for future research since the data were obtained before changes to Medicare coverage were implemented.

Findings

Average age of sample survey participants was about 75 years. Average annual total expenditures were $20,808.34; less than average annual before tax income of $21,798.12. Annual average dollars spent on health related costs were $1477.46 for health insurance premiums, $531.76 for medical services, $455.28 for prescription drugs, and $69.35 for medical supplies.

Most of the sample was white (87%), had a high school degree or less (31% and 38%, respectively), and resided in the urban South (26%). Single person or husband wife family types predominated (47% and 40%, respectively). Seventeen percent reported still being employed. Among married couples, 22% of the wives were still employed. Over 3/4 of the sample were homeowners (a proxy for wealth holdings).

Some of the sample purchased nonBlue Cross/Blue Shield type plans: 16% paid into a health maintenance organization, 13% purchased a preferred provider plan, 3% purchased a Commercial Medicare supplement, and 12% purchased other health insurance (e.g. dental). Mean quarterly premium dollars for these choices were $280.82, $331.29, $375.44, and $196.15, respectively. A few in the sample purchased Blue Cross/Blue Shield type plans. Three percent paid into a health maintenance organization under Blue Cross/Blue Shield, paying an average quarterly premium of $276.15. Less than 1% paid into a Blue Cross/Blue Shield preferred provider plan, paying an average quarterly premium of $301.29. Clearly, sample participants favored non-Blue Cross/Blue Shield Plans under each type of insurance plan. Overall, commercial Medicare supplements appeared to be the most costly options, health maintenance organizations the least costly options, when considering broad health insurance coverage other than Medicare for those over 64.

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Endnotes

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Food Stamp Reforms: The Impact on Elderly Consumers

Qualitative interviews were conducted to assess the degree of hunger and food insecurity as well as the nutritional practices among low-income elderly in Mississippi. Participation in and reliance on the Food Stamp Program was documented and characteristics of high-risk elderly populations were explored. Poor nutritional practices with this audience appear to be related to lack of money, limited access to transportation, poor overall health, and lack of nutrition education.

Sheri L. Lokken[1]
Mississippi State University

House Bill 3734 will cut food stamp benefits for household that include elderly members by $2 billion over six years. The hypothesis for this study was that the level of food stamp support available to elderly in Mississippi is currently inadequate. Further cuts will have negative implications on the health and nutrition of elderly.

Sample

A purposive sample of 62 low-income elderly from three congregate meal programs and five low-income senior activity programs was used. The locations were selected because of their geographic proximity to the 10 Mississippi State University students who conducted the interviews. Another reason for the selection of this sample was the directors of these sites gave permission for the interviews.

Of the sample, 20 individuals were currently receiving food stamps. All participants were over the age of 55 with 20 being age 55 to 65, 24 being age 66 to 75, 15 being 76 to 85 and one participant over the age of 86. Fifteen participants were White and 47 were African American. Nine participants were men and 53 were women.

Procedure

As part of the course requirements for the Fall 1998 Consumer Aspects of Aging class at Mississippi State University, five graduate and five undergraduate students were required to observe one interview conducted by either the instructor or graduate assistant and to conduct six interviews observed by either the instructor or graduate assistant. The instructor and graduate assistant conducted five pilot interviews in mid-September to test the interviewing instrument. All students were required to participate in a three-hour interview training and each interview was observed by either the instructor or graduate assistant to ensure consistent interviewing techniques.

Seniors at each site were given a brief description of the research project and informed that their participation was voluntary and they would remain confidential. Before beginning the interview, participants were read and asked to sign an informed consent form and permission to audio tape record the interview was obtained.

The interview process was qualitative. Questions were asked in the areas: (a) hunger, (b) food insecurity, (c) nutritional practices, (d) food stamp participation, and (e) risk factors for hunger, food insecurity, or poor nutrition. Students were trained to be conversational with the participants and often asked the questions in ways more easily understandable for the participant. Students were also encouraged to ask for clarification on answers and observe non verbal communication. Each interview took approximately 10 to 15 minutes.

Students transcribed the interviews from the tapes and wrote their personal observations from each interview. The transcriptions were then coded and analyzed by the students.

Findings

The majority of elderly interviewed did not admit experiencing hunger or food insecurity, but the amount of food assistance received by this audience is insufficient (usually $10 per month). Risk factors of elderly with hunger or food insecurity include lack of transportation, health problems, taking medications, and high utility bills. Poor nutritional practices with this audience seem to be related to lack of money, limited access to transportation, poor overall health, and lack of nutrition education.

Endnotes

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A Review of State Rent-to-Own Legislation

Currently there is no federal law protecting consumers in RTO contracts, but states have made RTO legislation part of their consumer protection plan. While the federal government has made several attempts at creating RTO legislation, they have not successfully created a RTO law. The purpose of this paper is to examine state RTO laws and to make a necessary first step towards consumer protection in the RTO arena at a federal level.

Sara Poetker, University of Missouri-Columbia[1]
Robert O. Weagley, University of Missouri-Columbia[2]

Over the last 25 years the RTO business has grown into a four billion dollar industry serving 2.8 million customers in 1996. Consumer advocates and rent-to-own (RTO) industry leaders continue to debate consumer protection legislation in the RTO arena. Several states have made RTO legislation a part of their consumer protection programs. Of these, a few states have legislation that has proven to be effective while others have passed laws that result in more protection for the industry than for the citizenry. A review of these laws and their effectiveness is the purpose of this paper and a first step toward greater public scrutiny of this industry.

Below is a list of some of the existing state laws:

- Twenty four states have enacted statutes treating RTO transactions different from other retail installment sales. All require limited disclosure provisions and restrict some of the terms of RTO transactions. However, none of the states' statutes call for the disclosure of the implied annual percentage rate (APR), as required by The Truth in Lending Act (TILA) for credit sales.
- North Carolina and Pennsylvania have amended their statutes regulating consumer credit sales so that the definition includes RTO transactions.
- Wisconsin has expanded the definition of credit sales to include leases where the consumer "pays or agrees to pay" for the good.
- Seven states authorize a fee, paid by the consumer, for the right to terminate the rental agreement. The industry often utilizes the terminable-at-will clause as justification for RTO contracts to remain outside credit legislation.
- Three states, Ohio, New York and Michigan, have disclosure laws which require each RTO item to prominently disclose important consumer information: the cash price and the amount and total number of periodic payments.
- Minnesota, Nebraska and New York have statutes that address the reinstatement period. These states instituted a staggered reinstatement period where the more payments the customer has made, the longer the time period allowed for reinstatement.
- Sixteen states exempt RTO transactions from retail interest rate limits. As this allows them to set their own rates, without legislative bounds, the RTO consumer often faces and pays very exorbitant rates of interest.
- South Carolina has deregulated interest rates on all types of retail credit, including the implied credit of RTO contracts. The longer the duration of the RTO transaction, the lower the maximum APR in this approach.

It is apparent that there is a consumer issue as several states have applicable laws. The Federal Government has discussed the issue on several occasions but has been unable to agree on legislation. Given the high implied APR of interest, the lack of disclosure and overly punitive reinstatement practices, it is obvious that some sort of Federal protection is needed. The law does not need to be regulatory, except to require information be provided on par with that of the credit industry. A Federal law that is both fair to the industry and which provides necessary protections for consumers needs to be created.

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An Affordable Housing Option: Community Land Trusts

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A family's housing expenditures should not exceed 30 percent of income – the accepted standard for affordable housing. In 1995, 75% of working poor renters spent more (Center on Budget and Policy Priorities, 1998). Despite a good economy and homeownership rates at an all-time high, 8.6 million renter and 5.6 million owner households face housing affordability problems (Joint Center for Housing Studies, 1998).

This study's purpose was to determine benefits of community land trust (CLT) homeownership as perceived by CLT residents and prospective residents. Before CLTs can be a viable method to increase the stock of affordable housing, it is necessary to determine the advantages and disadvantages of this homeownership type from residents' perspectives. The CLT maintains ownership of the land. In resale, the owner is ensured a fair return to the extent the home is affordable for the next purchaser.

To determine perceived advantages and disadvantages of CLT ownership these research questions were posed (Greenwell, 1997). What do residents and prospective residents identify as important reasons in the purchase of a CLT home? What are perceived advantages and disadvantages of buying a CLT home? Is CLT homeowner training important to becoming a homeowner?

Data were gathered from two groups in Fort Collins, CO using a questionnaire. One lives in a CLT of ten single-family homes built in 1994. The other was 12 low-income households, qualified to purchase in the county's second CLT – a 12-unit development completed in 1997. To qualify, household incomes (between 51 and 80% of the area's median household income) ranged from $17,085 for one-person to $44,320 for six-person households. Residents (18 households, 27 adults) were as likely to be married as not, to have a high school education or more, to be employed in service occupations, and to have incomes less than $20,000. Household size ranged from one to six (mean = 3.1). Seven households had disabled members.

Affordability was the primary reason households purchased CLT homes. Lower purchase and ownership costs (down payment, mortgage payments, ground lease) were important reasons for selecting CLT ownership. Participation with the CLT organization was the least important reason for buying and the greatest disadvantage of CLT ownership followed closely by homeowner training. "Location" was rated differently by the two groups as one CLT's area is considered more favorable than the other. Respondents indicated price as the greatest disadvantage of owning a conventional market home.

Training was needed to qualify for ownership. Unlike some CLT programs with scattered housing units, homes in this study formed two neighborhoods. In addition to preparing for ownership, training developed a sense of neighborhood and laid the basis for a homeowners' association. Owners who lived in their homes rated training as more important to becoming a owner and developing neighborhood cooperation than those preparing to move into homes. In comments both groups expressed dissatisfaction with relevancy of content and quality of training.

Implications indicate CLTs provide affordable housing. Education is needed before identifying potential homeowners to ensure understanding of CLT ownership and the neighborhood concept. Eligible owners must accept these concepts, crucial for affordability. Training must prepare owners for changes in personal financial management, the new housing unit, the location, and the homeowners' association. Communities must commit to affordable housing alternatives. For CLTs, a nonprofit group must be formed, land acquired, financing obtained, and residents prepared all in an environment that encourages development and maintenance of affordable housing.

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Protecting Consumer Privacy: Evaluation of an Educational Program

Consumers want, and need, to understand when it is appropriate to divulge personal information. Through workshops and a series of fact sheets Cooperative Extension staff developed a program to educate consumers about the need to protect personal information and to encourage them to take appropriate action. Results of the educational program were presented.

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Background

American consumers are increasingly concerned about how personal information is used. One way for consumers to protect their privacy is for them to be well versed regarding the conditions under which it is appropriate to divulge certain pieces of personal information. Unfortunately, many consumers don't know, or are uncertain, when it is appropriate to divulge specific pieces of information. Thus, there is a need for programs that educate consumers about these privacy issues. The program described here fills that need.

Program Description

The "Protecting Consumer Privacy" program educates consumers about the need to protect personal information. What information to keep private as well as when to keep it private and why are discussed. The program focuses on social security numbers, credit card numbers, other important personal identification numbers, direct marketing, and warranty cards. Teaching materials include a series of fact sheets developed by Cooperative Extension Staff.

The primary audience for these one-hour workshops has been members of service organizations and women's clubs. Typically, these audiences are also residents of small towns and rural communities. Participants often express the belief that their age and/or rural residence shields them from the threat of fraud or identity theft.

Program Impact

Post-program evaluations were used to measure the impact of this program. Based on their responses, prior to the workshops many participants either didn't know, or were uncertain about, which information to share and under which conditions it is appropriate to do so. Data collected from participants (N=296) show that before attending this program: 42% did not know you are not required to use your SSN as your driver's license number in our state, 45% were not aware of the dangers of having your SSN written or pre-printed on checks, and 43% did not know when to give important numbers over the telephone. As a result of attending this program: 49% planned to have their SSN removed from their checks, 56% planned to have their driver's license number changed to a number other than their SSN, and 44% indicated they would not give important numbers to telemarketers.

While there are many legitimate reasons for requesting information from consumers, it is also vital that consumers understand why they should protect personal information and how to do so. Implementation of privacy education programs can help consumers develop this understanding.

Endnotes

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Conducting a Feasibility Study for a Nationally-Consistent, State-Level Survey of Child and Family Well-Being Under New Welfare Policies

Cynthia Needles Fletcher, Iowa State University[1]
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Welfare reform has generated a great deal of interest in studying low-income households. The Personal Responsibility and Work Opportunity Reconciliation Act directed the Census Bureau to conduct a national study to monitor the effects of welfare reform on families and children. While the Survey of Program Dynamics (SPD) will inform Congress about the impacts of welfare reform policies on the national level, no mechanism is in place to provide state-based and sub-state information to those who now have the major responsibility for shaping and implementing social welfare policy. With partial support from the Census Bureau, Iowa State University has recently completed a feasibility study to develop methodologies for expanding the SPD to provide state-level data; and to develop and test questions that could be incorporated into the SPD or the Survey of Income and Program Participation.

Methods

The initial task was to construct a series of questions on topics not covered in the national SPD instrument and examine the steps required to integrate such state-level questions with the national survey. Based on findings from state and community case studies and a qualitative study of welfare families, a series of key welfare reform issues were identified. The core SPD instrument was augmented by questions that are of particular interest in Iowa: transportation, health, food security, economic hardship, substance and domestic abuse, social supports, and attitudes toward the welfare system.

A second task was to investigate the use of state welfare participant databases as a sampling frame to augment traditional area sample frames. A database of Iowa's Family Investment Program (formerly AFDC) and food stamp recipients was created in April 1998 and represents participants as of March 1998. A two-stage cluster sample was selected from the database. In the first stage of sampling, a stratified sample of 10 counties was selected; a sample of cases was then selected from each sample county. To ensure that all areas of Iowa were represented within the sample, the state was divided into seven strata and counties were selected from the strata. The target number of completed interviews was 100. A total of 125 cases was selected under the assumption that not all cases would be identified as eligible and agree to be interviewed. Personal interviews were conducted in July - October, 1998. Each respondent received a $20 gift certificate from a local grocery store.

Results and Implications

While the SPD questionnaire allows researchers to obtained detailed income and program participation information, the level of respondent burden and interviewer burden is quite high for the segment of the population of interest. Many important localized questions could not be included because of concerns about interview length (ranging from an average interview time of 2 hours to 3-4 hours for large families). Alternative strategies that retain a core set of SPD questions would allow a broader set of locally relevant questions to be incorporated into a survey instrument.

Early results indicate that using administrative databases to select a sample is an effective but potentially costly way to reach low-income households. Of the 125 cases selected, 97 were located and 68 agreed to be interviewed. Aggressive tracking, due to gaps in the database and the fact that the households are mobile, and excellent incentives and refusal conversion efforts are needed to enhance response rates. In addition, the use of a mixed mode approach relying on telephone and in-person interviews may be an effective way to reduce the high cost of surveying low-income households.

Endnotes

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Elderly Households' Travel Expenditure Patterns: Analysis of Double Hurdle Model

Using the 1995 Consumer Expenditure Survey, this study (1) examines the travel-related expenditure patterns of elderly households headed by those who are 55 years old or older, and (2) uses a double-hurdle model to identify factors that influence the decision to travel and the level of travel expenditures among the elderly consumers. Results from this study provide valuable information about senior travelers and the information can be used to serve them by marketers.

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In 1996, the percentage of the U.S. population which was 55 years old or older was 20.8 %. The percentage is projected to be 23% by the year 2005 (U.S Bureau of the Census, 1998). As a group, the economic status of the elderly has been improved and they tend to have large amount of discretionary income and more leisure time (Bryant, 1990; Hong & Swanson, 1995). With more available leisure time, they tend to be frequent travelers and constitute significant portion of the expenditure in travel market (Chon & Singh, 1995). The major objectives of this study are: 1) to examine expenditure patterns among three elderly groups for five distinct categories: food, lodging, transportation, entertainment, and other expenses; 2) to identify factors associated with the decision to travel and the level of the travel-related expenditures; and 3) to draw implications for consumer educators and travel industry.

This study used the first quarter data of the 1995 Consumer Expenditure Survey (CE) and the sample for this study consists of 1,588 elderly: 588 young-old (55-64), 563 old (65-74) and 437 very-old (74 over). Among 1,588 elderly, 433 respondents (27.3%) traveled during the survey period and reported expenditure related to tourism product and services.

Four groups of independent variables were examined. Socio-demographic variables were ethnicity, education, marital status, household size, and region. Economic variables included after-tax income, liquid assets, illiquid assets, and homeownership. Age, age squared, and health expenditures were included to reflect the health status of the respondent. Employment status captured time constraint faced by the elderly. Double hurdle model has two steps of estimation: estimating a model of the probability of traveling using probit and truncated regression analysis for the model of amount spent for trips (Blundell & Meghir, 1987).

Transportation ($1,308) was found to be the greatest components of the total expenditures, followed by food ($807), lodging ($572), sightseeing and entertainment ($323), and other expenditures ($135) annually. Probit model suggest that race, education, marital status, and economic factors, such as after-tax income, illiquid assets, and home ownership determine whether or not to travel among the elderly. However, age, health care expenditures, and household income were significant in the truncated regression model. These findings clearly illustrate the importance of the two step approach to model travel behavior of the elderly.

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Work and Welfare Participation Decisions among Poor Single Mothers: Results of Bivariate Probit Analysis

Using the 1992-1994 National Survey of Families and Households, this study examines factors affecting work and welfare program participation among poor single mothers. Assuming that work and welfare decisions are intertwined and are jointly considered, bivariate probit analysis is employed. Results provide a better understanding of poor single mothers and useful implication about the recent welfare reform.

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Over the past decades increasing unwed births and marital disruptions have seen an increase in growth of single mothers living with young children disproportionately constitute the population that has been the target of the recent welfare reforms and stigmatized as the undeserving poor. Politicians have repeatedly attacked this group for their behavior problems and work ethic. The Family Support Act of 1988 required all states to implement work-to-welfare programs for public assistance recipients. In 1996, President Clinton signed the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), imposing a mandatory work requirement and time limit assistance on welfare recipients (Blank, 1997). Within a limited period of time, welfare mothers must leave welfare for work, and become economically self-sufficient and independent. Therefore, for poor single mothers who are eligible for public assistance programs, work and welfare become inseparable decisions.

Data for this study are taken from the 1992-94 round of the National Survey of Families and Households (NSFH2). The sample (N=385) consists of poor single mothers living with young children under age 18. All respondents are eligible for welfare, which is broadly defined as any kind of AFDC, general assistance, food stamp or energy assistance. In this study, it is presumed that poor single mothers are involved in a joint decision process since welfare and work decisions are not mutually exclusive (Fraker & Moffitt, 1988; Gensler & Walls, 1997). Earnings from work influences program participation decision because earned income reduces the potential welfare benefit (Moffitt, 1981). So, a bivariate probit model is employed.

About 70% of the poor single mothers in the sample received public assistance, although they were all eligible for welfare. The mean value of estimated welfare payment was $178 per month without including non-cash benefits. Over 7% of the sample worked outside the home and the mean age of poor single mothers was 38. About one-third of single mothers had child support, alimony, and family support awards. Average annual family income was $6,595. Welfare payment increased the likelihood of relying on welfare, while whites and college education decreased the probability of welfare program participation. Welfare payment was negatively related to the likelihood of working for pay outside the home. Meanwhile, being never-married and work experience were adversely associated with work decisions of poor single mothers.

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Food Consumption in Urban and Rural China: Quantity vs. Quality

Nutrition adequacy has been a concern in the developing world. In China, the survey indicates that the differences in diet and nutrition intakes between urban and rural areas are dramatic. Our study shows that urban China needs to improve food quality by consuming food with more protein and less cholesterol and more fibers and less fat, whereas, rural China still needs to work on quantity to increase protein and fat intakes in order to overcome their insufficiency.

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Wen S. Chern, The Ohio State University[2]

China is a big country with 1.2 billion people and thus, has attracted much attention in the global economy. Lester Brown's book on " Who Will Feed China?" in 1995 caused worldwide debates on global food safety. Will China cause food shortage in the world? It is still a myth. However, since 1978 under the economic reforms, the changes in market structure have improved the living standard and welfare among the Chinese people. The per capita income increased from $685 Yuan in 1985 to $3,900 Yuan in 1995. The food consumption also has changed dramatically due to the income effect.

The Third National Nutrition Survey in China in 1992 provides much information on this subject. The database covers dietary intakes, anthropometry measurements, hemoglobin assay and household income, etc. The survey shows that the average energy intake in China was slightly lower than the RDA (Recommendation Daily Allowance) level (2,400 Kcal). It was 99.8% and 95.7% of the Chinese RDA in urban and rural regions, respectively. That means, the deficiency in energy is not really a problem in China. In addition, the analysis of the sufficiency in nutrient intakes in urban region indicates that the average diet of urban inhabitants is reasonable, except in calcium and Vitamin B group. Rural inhabitants have the same problem as their urban counterparts. Besides, the dietary quality and quantity of rural inhabitants remain inadequate, especially that of protein (86% of RDA) and calcium (47% of RDA). Therefore, the food consumption in urban and rural China faces different problems.

The differences between urban and rural China are dramatic. Adjustments to a proper diet in food consumption patterns should be different. In urban China, deficiency in main nutrient intakes is not really a problem whereas, in rural China, protein and fat intakes are not sufficient. In addition, calcium intake is extremely lower than the RDA level in both regions. Preference and consumption pattern might be the most crucial reasons. To solve this problem, education and promotion of milk consumption will be the key issue. On the other hand, the concerns of increasing chronicle diseases associated with increasing income call for dietary adjustment and improvement. For urban inhabitants, dietary quality should be improved by consuming food with more protein and less cholesterol and more fibers and less fat, whereas for rural ones, dietary quantity still needs improvement by increasing protein and fat intakes to overcome insufficiency. In conclusion, more education and information about health and nutrition will lead Chinese to a more proper diet without the cost of over-adjustment. The econometric models of the demand for nutrients and foods in both rural and urban China are currently being developed.

Acknowledgements

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All My Money: A Financial Management Curriculum for Persons Working with Limited-Resource Audiences

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Overview

All My Money is a curriculum for teaching money management and consumer skills to limited resource audiences. The materials are designed for staff or volunteers of community agencies and social service organizations to use in teaching their clients. In Illinois, Consumer and Family Economics educators from University of Illinois Extension train the agency staff members how to use the curriculum in a series of workshops. The curriculum is also available for purchase by groups outside of Illinois.

All My Money is appropriate for low-income audiences and those with low reading levels. It can be used by agency staff with groups of clients or with individuals, and can be used as a series or as individual lessons, depending on the agency and client needs. It does not rely on equipment that agencies typically do not have (e.g., overhead projectors), but uses hands-on activities and adult learning principles.

Curriculum Development and Content

A needs assessment survey of agencies in Illinois was used to establish the criteria for the curriculum including the topics to be covered and the types of settings (group or individual, series or single lesson) for which the materials needed to be appropriate. Several existing curricula were evaluated against these criteria. The one which scored highest was tested in two pilot training series. The results of the needs assessment, the pilot, and a review of other research literature on teaching limited resource audiences guided the revision and expansion of the curriculum.

All My Money is made up of eight lessons, each with activities and handouts as well as a lesson plan and background information for the trainer. The lessons are Making Spending Choices, Envelope Budgeting, Planning Your Spending, Understanding Credit, Handling Credit Problems, Building Consumer Skills, Taking Consumer Action, and Checks and Checking Accounts.

Activities in the curriculum include a role plays for envelope budgeting and opening a back account, drawing your future, figuring your credit limit using a technique appropriate for low-income audiences, calculating your food budget, writing a consumer complaint letter, a case study of how to get out of debt, and several activities on using a checks and checking accounts.

Initial impact evaluations indicate improvements in money management behaviors, communication about money with family members, and consumer skills and behaviors.

Funding for the development of ***All My Money*** was provided by the USDA Family Nutrition Program. ***All My Money*** was adapted from the Washington State Cooperative Extension Service program, Money Management Advisors.

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Tax Breaks for Higher Education: A Fact Sheet for Parents and Students

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Charlotte F. Crawford, University of Illinois Extension[2]

Purpose

Expenses for higher education offer taxpayers many ways to reduce their income taxes. This can provide some relief from the high cost of college, graduate school, and other higher education courses. Careful planning before the expenses are incurred will assure that parents and students receive the full benefit of these complicated tax breaks.

The Tax Breaks for Higher Education fact sheet gives parents and students the information they need to maximize tax benefits from expenses they incur for higher education. Other sources that deal with this topic — even those aimed at financial and tax professionals — typically leave out critical details that could lead to poor decisions on the part of parents and students. Families must be able to clearly determine if they and the types of expenses they have qualify for specific tax breaks, and how claiming one tax break will affect their eligibility for others. This fact sheet fills that gap.

Contents

Each section in this fact sheet was developed to help readers find the information they need. An overview of each of the nine tax breaks that are currently available acquaints readers with the major features and requirements of each. The featured tax breaks include the Education IRA, Withdrawals from Retirement IRAs, Hope Scholarship Credit, Lifetime Learning Credit, Student Loan Interest Deduction, Qualified State Prepaid Tuition Programs, Employee Assistance Plans, EE Bond Interest Deduction, Education Bonds.

The benefits, requirements, and limitations for each tax break are presented in table format so that the reader can compare tax breaks head to head or quickly scan all of the information for one tax break. These details answer questions such as, will my level of income limit my ability to use the tax break? Or, is it the taxpayer or the dependent who can claim the tax break? Separate tables cover each of these topics: 1) Tax Breaks: Basic Characteristics, 2) Whose Expenses and What Expenses are Allowable?, 3) Requirements for Student and Institution, 4) Type of Education Program Covered, 5) Additional Restrictions on Claiming Tax Breaks.

Some terms used in this fact sheet have very specific definitions. For others, the definition varies from one tax break to another. The Explanation of Terms section provides definitions and explanations to clear up any questions or confusion.

Claiming one tax break may limit or prevent the taxpayer from using other tax breaks. The section on Combining Tax Breaks shows families how using one tax break affects eligibility for others so they can maximize the benefits they get.

The final section of the fact sheet provides tips on ways to make the most of tax breaks.

Using the Fact Sheet

This fact sheet focuses on the tax aspects of several ways to pay for or take deductions for higher education expenses. Readers will need to also weigh other advantages or disadvantages in choosing the tax breaks they will use. Other aspects may be equally or even more important in planning how to handle education expenses.

Readers are encouraged develop a savings plan for meeting those expenses to if they have some time before higher education expenses will be incurred.

To illustrate how the fact sheet may be used by families, this poster session also looks at two hypothetical families in different income categories whose children are at different stages in college and who have used various methods to save for college. Their situations are analyzed using the contents of the fact sheet to determine what tax breaks may be available to them and which choices of tax breaks may be most advantageous.

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A Comparison of Two Credit Scoring Models: Commercial versus Consumer Education

This study compared a commercial credit scoring model and a consumer education model using data from the 1995 Survey of Consumer Finances. Results from the consumer education model were more informative than the commercial model. Educators could use similar models to design information and programs for credit-constrained consumers.

Wen Yin[1], Purdue University
Sharon A. DeVaney[2], Purdue University

A credit scoring system lists the credit characteristics to be drawn from a credit application. Different point values are assigned to a credit application based on a person's history and credit situation. The point values are added together to arrive at a total score. If the credit score is above a certain level, the application will be accepted; if otherwise, the application will be rejected. A more extensive investigation might be conducted for any applications between the acceptance and rejection levels. The factors used in a typical *credit scoring model are* years at the same address, years at the same employer, age of principal automobile, housing status, monthly debt payment as percent of gross income, and frequency of wage payment (Cole & Mishler, 1998).

A *consumer education model* might include years at the same employer, age of principal automobile, housing status, age, and frequency of wage payment. But, it could also include gender, race, education, marital status, household size, employment status, occupational status, income, total debt to income ratio, and presence of a checking account and savings account. The 1974 Equal Credit Opportunity Act and its subsequent amendments prohibit discrimination by sex, marital status, race, color, religion, national origin, and age so the commercial credit scoring model should not include these factors. However, a consumer educator could develop educational materials and programs highlighting a broad range of factors. The information should be presented in a manner to help inform consumers about the likelihood of being accepted or rejected for credit based on factors in the models.

When both models were tested using data from the 1995 Survey of Consumer Finances, most of the results were consistent with expectations showing that lenders have found the appropriate predictor variables. In the *commercial scoring model*, respondents who were renters, with less job tenure, with older automobiles, and with higher ratio values for monthly debt payments to income were more likely to be turned down for credit. In the *consumer education credit scoring model*, respondents who were renters, with less job tenure, and with older automobiles were more likely to be turned down for credit. In addition, the *consumer education model* showed that consumers who were white, married, with more education, and in occupations that were non-service related were less likely to be turned down for credit than other similar respondents.

Consumer educators could work with specific groups of consumers to help them improve their likelihood of being accepted for credit. Low income and non-white consumers are likely to be a large component of those who are turned down. This provides an opportunity for educators to help with goal setting, establishing a spending plan and developing record keeping systems. Information about finding lower interest rates should be included because research has shown that consumers conduct a limited amount of search for information on interest rates.

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Automobile Loans: The Determinants of Borrowing and Size of the Loan

Assuming that borrowing for an automobile was an application of the life cycle hypothesis, the study examined the determinants of automobile loan users. A multivariate regression using data from the 1995 Survey of Consumer Finances showed that younger households, with less education, and those who were married were more likely to borrow for an auto. Size of the loan was positively related to income and education and negatively related to the interest rate.

Ik-suk Kim[1], Purdue University
Sharon A. DeVaney[2], Purdue University

The life cycle hypothesis assumes that households borrow when they are young, increase the amount of savings during mid-life, and spend down their savings during retirement. Home equity loans were used to illustrate the life cycle hypothesis (Salandro & Harrison, 1997). The purpose of this study was to apply the life cycle hypothesis to an automobile loan to see if it was comparable to a home equity loan. Thus, the same factors were selected for analysis, i.e., age, education, income, marital status, financial assets, interest rate, and amount of the loan. Using data from the 1995 Survey of Consumer Finances, the study found that among the 4,299 households, 1,047 borrowed to finance an automobile. A typical borrower was 42 years old, with a household income of $47,000, and $25,400 in financial assets. The average automobile loan amount and interest rate were $11,300 and 9.7%, respectively.

Logistic regression was used to examine the probability of borrowing to purchase an automobile. Results showed that households younger than 35 and between 35 and 45 were more than twice as likely to borrow as households who were 55 and over. Household heads with some college education were more likely to borrow than college graduates were. Married households were three times as likely to borrow as were unmarried households. Ordinary least squares regression showed a positive relationship between size of the loan and household income and education of the household head. Interest rate was negatively related to size of the loan indicating that a lower interest rate meant a larger loan.

The study provides support for applying the life cycle hypothesis to auto loans. A contribution of the study is the insight provided for developing educational programs for consumers. Automobile loans are usually provided by automobile companies and financial institutions. Based on the findings, the target audience for consumer education programs is younger households without a college degree. Information should be easily understood. Print materials should be clearly written and designed to appeal to the appropriate audience.

Future research on this topic could involve other variables. Race, household size, and the ratio of debt to income could provide additional insight for consumer educators. Non white households may be more likely to use loans. The debt to income ratio could be compared to suggested guidelines to show which consumers are likely to be granted credit to purchase an auto.

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Policy and Regulation in Small Business

The purpose of this paper is to provide an introduction to the panel's topic, a review of the general focal points of the current relevant literature, and highlight its theoretical and conceptual bases.

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Ramona K.Z. Heck, Cornell University[2]
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Small businesses provide new competition to existing businesses, create new jobs, advance new technologies, and help improve product quality (Holtz-Eakin (1995). Family owned and managed businesses are important in the United States. The majority of all firms in the U.S. is family firms and these family firms contribute about half of both the nation's GDP and total wages. Additionally, these family firms comprise one-third of Fortune 500 list of large companies (Ibrahim & Ellis, 1994).

Not only do family owned and managed businesses make substantial contributions to the overall economy, households make tax contributions on the net business income earned in these family firms (Heck, 1994). This indicates that the tax burden for the family owned and managed business is significant and why the Federal tax laws have real meaning for the business enterprise (Heck, 1994). Holtz-Eakin (1995) suggests that policies targeting tax breaks, wage subsidies, loan guarantees or outright grants are probably not the most useful in creating a 'small business climate,' but rather "… policies should be devoted to developing an environment favorable to innovation, employment, and growth in the economy as a whole" (Holtz-Eakin, 1995, p. 2).

Holtz-Eakin (1995) suggests two public policy principles as guidelines to help formulate small business policies. These two public policy principles are economic efficiency and equity or fairness. He raises the question "…how should we think about fairness and public policy toward entrepreneurs and small businesses?" (p. 18). He further states that the impact from public policy are transmitted to the workers, managers, financiers, and owners, therefore applying the notion of fairness to firms could lead to inconsistent treatment of individuals.

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Dealing with Hectic Times:
Strategies Used in the Business and in the Family

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Margaret A. Fitzgerald, North Dakota State University[2]
Mary Winter, Iowa State University[3]
Jennifer Paul, Iowa State University[4]

The purpose of this paper is to ascertain the adjustment strategies used by business managers and household managers in family businesses during "hectic times." Hectic times are defined as periods when increased and/or competing demands are made on time and/or human resources either in the family or the business. Adjustment strategies are a means of restoring or maintaining an acceptable level of well-being for the family or the business.

Data are from the 1997 National Family Business Study (see Winter, Fitzgerald, Heck, Haynes & Danes, 1998 for a description of the sampling and data collection procedures). In order to compare strategies used by business and household managers, only those households in which both the business manager and the household manager completed the interviews, or where one member performed the dual-role of household and business manager, were included in the sample used in this analysis (n=673).

The type and level of adjustment strategy used by household managers and business managers were assessed using a list of fourteen adjustment strategies, seven that addressed how household managers could deal with increased demands in the business, and seven parallel statements that addressed how business managers could deal with hectic times in the family. Respondents were asked to respond on a five-point Likert-type scale, ranking '1' for never and '5' for always.

Household managers rated three adjustment strategies on the 'sometimes' to 'always' side of the scale in terms of frequency of use during demanding business periods. Household managers reported that those family members working in the business were likely to bring business tasks home, put off or skip routine household tasks to do business work, and take family work that was normally done at home to complete while at the business. The mean scores for the business manager were, in general, lower than mean scores for the companion adjustment strategies used by the household manager. Business managers report that they 'sometimes' to 'seldom' do more business tasks at home; get less sleep; take care of family responsibilities at work more often; skip or defer routine business demands to spend more time with family; and temporarily shift some of the business work to others. Business managers would seldom to never hire temporary help for either the home or the business, or have family members, other relatives, or friends help with the business without pay. There were significant differences in the frequencies of strategies used in the same household between business and household managers, with household managers reporting greater adjustment to the business than vice versa. The present situation may determine the strategy used. Maintaining clear boundaries between the family and the business may be unrealistic given that work is brought from the business to the household and vice versa when times are hectic. In demanding times, adjustments may have to be made in the business and in the family to restore balance.

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Endnotes

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The Differences in Financial Structure Between Women- and Men-Owned Family Businesses

Lenders are faced with the challenge of evaluating the financial success of business, or proposed businesses, by examining the financial status of the household. This study examines the relationships between business and household financial variables to assess the reliability of these indicators for women- and men-owned business borrowers.

George W. Haynes, Montana State University[1]
Barbara R. Rowe, Purdue University[2]
Gong-Soog Hong, Purdue University[3]
Rosemary Walker, Michigan State University[4]

Access to credit has been perceived as a substantive problem for women business owners. Several studies have examined access to credit by women. More recent research has found that women-owned businesses do not appear to pay higher loan prices or face more stringent collateral requirements than men-owned businesses (Haynes, 1995). Haynes and Haynes (199) suggest that while women-owned firms still have a higher probability of borrowing from family and friends, women-owned businesses have gained access similar to men to commercial bank line-of-credit loans.

Evidence from the National Family Business Survey suggests that women-owned businesses are somewhat smaller, more likely to be organized as sole proprietorships, more likely to be engaged in [illegible]sportation and retail trade, less likely to be located in small towns, less likely to have children in the household, and have somewhat older manager than men-owned businesses. Women-owned businesses also have fewer assets, liabilities, equity and business and household net incomes than men-owned business owners.

In comparing the financial status of the two, the financial status of the household is a good indicator of the financial status of the business for men-owned businesses, but not for women-owned.

Women business owners use fewer financial resources (assets and liabilities) and earn less income. Household balance sheets (assets, liabilities and equity), income statements and cash flow problems are good indicators of the business balance sheet, income statement and cash flow problems for all businesses. The actions taken to solve cash flow problems are highly correlated between the business and the household.

When differentiating between women- and men-owned businesses, household financial statements are good indicators for men-owned businesses only. This might contribute to the information asymmetry faced by lenders in evaluating the success of women-owned business.

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Challenges for Family Businesses in Marketing and the Legal Environment

This paper examines marketing and management functions in small family businesses as they relate to the political environment. That environment is discussed and results are reported regarding respondents' perceptions of marketing strategy and state and federal regulatory problems.

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Elizabeth Scannell, University of Vermont[2]

Introduction and Methods

Much of the family business literature focuses on tax policy and estate planning; while useful, such a focus ignores numerous other areas in which legislation also is taking place. We looked primarily into literature on policy that affects small business. Measured by employee numbers, our sample was one of small businesses, with zero to four full-time employees. Legal compliance in general and specific areas such as product quality, labeling, civil rights, and health and safety issues have long been concerns for small businesses. Policy offers continual challenges to small business owners and mangers simply because it changes, as does court interpretation of legal meanings.

Data were gathered in 1997 in a national telephone interview of business managers. Qualifications specified for identification as a family business included length of time in business, as well as hours and involvement, but did not include number of employees. Response rate was 63% yielding a total of 708 owners and managers of family businesses who provided data. These respondents had a mean age of 46 years; 73% were male, and 67% had more than a high school education. Most (39%) had businesses that provided a service; 20% were in wholesale or retail trade, 16% in agriculture and mining, 11% in construction, and 8% in finance, insurance, and real estate, and 7% in manufacturing and transportation.

Findings and Conclusions

Significant differences were found among respondents in perceptions of legal problems based on size of business (with those who employed fewer full-time employees perceiving fewer serious problems with both state and federal law than those who employed larger numbers) and size of business (with those whose gross annual income was lower having more problems with federal law than those with higher income). Additional significant factors were legal ownership and industry classification. Managers of businesses that were corporations had more problems with both state and federal laws than did managers of businesses under other types of ownership structure. Regarding industry classification, those in construction reported serious problems with state and local laws, while those in manufacturing and transportation had more serious problems with federal law. For marketing strategy development, results showed differences based on gender and ownership type. Males and owners of sub-chapter S corporations reported more serious problems with marketing than females and other types of owners. Moreover, those who rated their businesses lower in success and those unsatisfied with community support also reported more serious problems with marketing.

Thus we found indeed that some family business managers have problems with policy. When these problems are recognized, help can be sought. Of more concern are those who perceive fewer problems or no problems at all. Are they actually experiencing fewer problems because their businesses are less complex and more easily managed, or does their response indicate something else perhaps either lack of legal knowledge or devotion of attention to more pressing business matters? Of concern also are those managers who recognize they are exempt from some policies because of their small size; some may be uncertain about which ones, or assume their size exempts them from all or most law, state and federal. It is important also to recognize that all businesses, no matter what size, can be sued under common law and thus may have to contend with liability under state tort laws.

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Planning to Pay for Parents' Long-Term Care Using Medicaid

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Although Medicaid was created as a health care program for poor people, it has become a key factor in nursing home coverage for middle-class elderly. The cost of a year in a nursing home can range from $30,000 to $60,000. Presumably, middle class families use Medicaid because they do not have the financial capacity to pay for long-term care. This paper reports on a survey conducted to learn about planning by families for the financing of elderly parents long-term care.

Based on previous research, we anticipated that parents' increased age, presence of a single parent, and more exposure to long-term care would mean a greater likelihood of planning for care. When both parents are living, one may be a care-giver to the other, but when only one is living, someone else may be needed to provide care. The likelihood that many care-givers would be women in the labor force was the motivation for using the survey with a sample who was employed. We believed that if prospective care-givers were working, they would be less able to provide care; therefore, families would be more aware of planning in advance.

We developed and pilot tested a survey. The sample consisted of 925 family and consumer science teachers in a mid-western state. Of 499 replies representing a 55.4% response rate, 382 had living parents. Those respondents were used for this study. Of the 382 respondents, 17% had friends or family who needed *a lot* of long-term care and 14% provided *a lot* of personal care, shopping, chores or driving. Ten percent had helped *a lot* with money management. One-third expected that parents would use available community services, 59% said parents would use at home long-term care, and 24% said parents would use shared living arrangements for care. Eleven percent of parents had worked with a financial adviser and 20% of parents had purchased long-term care insurance. One-third were prepared to pay for long-term care, but 47.5% of respondents said that parents would use Medicaid.

In a logistic regression where the dependent variable was coded as 1 equals the likelihood of using Medicaid, significant predictors were: community services, shared living arrangements, having long-term care insurance, and using someone else's savings. Compared to those who would not use community services, those who would use services were almost 4 times more likely to plan to use Medicaid. Community services was not explained in detail in the survey, and respondents were free to interpret the term as it applied to their community. Families sharing living arrangements were 90% more likely to use Medicaid, possibly because the use of a nursing home for the ill parent would ease their care-giving responsibilities. Those who had purchased long-term care insurance were 1 and 1/3 times more likely to use Medicaid than those who had not purchased insurance. Apparently, the parents and their families know the amount of long-term care insurance coverage they had purchased and when that is used up, the alternative is Medicaid. Compared to those who would not use someone else's savings, those who would do so were 70% more likely to use Medicaid. This suggests that when available savings are used up, the alternative is Medicaid.

Although the respondents' parents may be engaged in rational planning, these results should be examined in more detail. People may be uninformed of the requirements for using Medicaid. Future research should attempt to determine how knowledgeable people are about Medicaid. Also, people may not be familiar with cost and eligibility guidelines for community services; awareness of these factors should be explored.

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Financial Giving Patterns of the Sandwich Generation

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Middle generation adult children, sandwiched between responsibilities for teenaged children and parents, are most likely to face competing demands for their time and money. Brody (1990) notes that long life expectancy, falling birth rates, and decreasing prevalence of married households will only exacerbate the phenomenon of competing responsibilities. When adult children give time and money to parents, these efforts compete with other demands for adult children's limited resources. Time and money resources that would otherwise be available for their children spouse, employer, and community are given to their parents (Hong & White-Means, 1997).

Most of the literature on the responsibilities of the sandwich generation, however, has not examined racial patterns. This is in part due to the paucity of data on giving patterns among ethnic minority populations and also due to the relatively small samples of adult children who face multiple roles of providing support for their parents and their children. Caregiving research suggests that older persons' caregiving networks, caregiver activities, and institutionalized care varies by race and ethnicity (Gibson & Jackson, 1989; White-Means & Thornton, 1990).

This study examines the state of being an adult child who is sandwiched in the middle, using the 1992 Health and Retirement Study. The sample for the study consists of 1,772 (1,359 white and 413 black) adult children with at least one living parent and one child younger than 18 years of age who live with the respondent or live away from home. The dependent variables are two dichotomous variables: whether the respondent provided financial support to their parent and their child. Independent variables are support needs, financial support and time given by siblings, altruism, and sociodemographic factors. Bivariate probit analysis was conducted to estimate the giving models for parents and children by race.

About 13.3% of black adult children provided financial support to their parents while only 9.6% of whites adult children did. More white adult children (37.9%) gave money support to their children than black counterparts (29.3%). On average, white adult children gave $218 to their parents in 1992 whereas black adult children gave $140. The financial giving to children also is much larger for whites ($1,109) than that of blacks ($636). In this study, respondents are primarily in their mid-50s, have completed high school, and two-thirds are white. About 60% of both white and black adult children are employed with mean incomes of $12, 275 (whites) and $10,388 (blacks). About two-thirds of both white and black adult children are in good or better health.

For whites, the bivariate probit analysis indicates that caregiving needs and siblings' giving are positively associated with giving financial resources to parents. Number of own children and total parents reduce the likelihood that adult children give to parents. Parent's education, being employed, receipt of bequest, being in good health, and having post retirement health insurance influence positively the financial giving to their own children. Fewer variables were significant in the giving model of the black sample. Siblings' giving and living in the northeast are positively related to financial giving to parents. Parent's education and having post retirement health insurance also increase the likelihood of giving to children. The study suggests that there are important racial trends in the giving patterns of the sandwich generation. Financial support given to parents by their adult children are complements, suggesting that parents with more children are more likely to receive financial support than those with fewer or no children. With access to post-retirement health insurance, adult children need less financial resources to cover cost associated with their own disabilities and have more resources to give to their own children.

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The Effect of Long Term Care Insurance on Formal Medical System Use In Germany

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Objective

This study focuses on formal medical care use as measured by doctor's visits and hospital stays of invalid elders in Germany before and after mandatory long term care insurance (SLTCI). We tested whether there were differential effects of income and social welfare receipt before and after SLTCI was implemented.

Data Sources Study Setting

Data were obtained using four years of the German Socio-Economic Panel Data (SOEP), 1994-1997 and a sub-sample of invalid elder individuals were at least 60 years of age in 1994.

Study Design

An unbalanced panel data model was estimated to examine the use of the formal medical care system by invalid elders before and after SLTCI. A sample selection model was employed to obtain estimates for the probability of visiting a physician and having a hospital stay and the number of physician's visits and hospital admits and days spent. Tests of restrictions that income and receipt of social insurance did not impact use of the formal medical system were conducted.

Principal Findings

Levels of income and receipt of social insurance had no differential effect on the probability of having a physician visit. However, receiving social insurance increased the number of visits, and decreases in income increased physician's visits after SLTCI. SLTCI does affect the probability of a hospital stay. After SLTCI, those with lower incomes had a slightly higher chance for a hospital visit. There were no differential effects for the number of hospital admits or days spent in the hospital.

Conclusions

Previous studies have concluded that persons with lower incomes and those receiving social assistance used the formal medical system inappropriately. SLTCI was supposed to "fix" the problem. Instead, we find that, in the short run (1 ½ years after implementation) these individuals have an increased number of physicians' visits and an increased probability of being admitted to the hospital.

Perhaps these individuals were not receiving the medical attention they needed before SLTCI and receipt of home care brought to light medical problems that were previously missed. The question of how SLTCI affects medical system use in the long run must still be examined.

Endnotes

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Educating Consumers About Financing Long Term Care: Opportunities and Challenges

This presentation offers an overview of financing long term care consumer education development efforts at the University of Minnesota Extension Service. The goals of the program are: a) improving the financial literacy of baby boomers and older adults regarding long term care and later life financial health, b) increasing communication and planful behaviors regarding financing long term care; and c) providing access to conceptually sound research based educational resources to improve informed decision making.

Marlene S. Stum, University of Minnesota

Assessing Existing Consumer Education Resources

An assessment was conducted to identify existing resources designed to help consumers make long term care financing decisions. Over 80 items were identified. They ranged from government to advocacy organizations, and for profit organizations. Each resource was analyzed to assess how long term care was defined, along with if and how risk, costs, financing alternatives, and decision making criteria were included as content.

The findings suggest a majority of resources focus on one private or public strategy for financing long term care (e.g. long term insurance). Few resources are designed to help consumers understand the range of private and public financing alternatives or offer decision making criteria. Existing resources commonly present long term care as meaning only institutionalized care. Information sources are often developed and distributed by sources with some self-interest in the message provided, making it difficult for consumers to know what information sources are trustworthy. Existing resources also often focus only on the legal and financial dynamics of financing long term care, ignoring the complex issues of unwritten family rules, differing values and perceptions of who should be responsible for financing long term care, and financial security goals. The review found few links between long term care and retirement planning education. The impact of longer life expectancies and the implications for financial health are often ignored, focusing instead on getting to retirement, the early retirement years, and on health care choices not covering long term care. One challenge of educating consumers involves the need for state-specific information. Overall, the assessment of existing resources helped to identify gaps and strengths in consumer education resources and reinforced the need for research-based decision making resources. Consumer educators are encouraged to conduct a state-wide assessment of existing long term care resources to help avoid duplication, clarify content gaps and needs, and identify potential collaborators as well as competitors.

Development of Educational Resources

Consumer education materials have been developed to build knowledge and skills regarding financing long term care. The following decision making points provide the conceptual foundation: a) recognizing who is at risk of long term care; b) understanding possible long term care costs; c) sorting out later life financial security expectations, goals, and concerns; d) understanding financing alternatives and consequences; e) choosing financing alternatives that meet your goals, and f) taking action now before a crisis. Worksheets, fact sheets, and quizzes cover essential content in each decision making area. These materials are currently being pilot tested with 600 women (50 years and older) to assess changes in knowledge, skills, and behavior after participating in an educational session. Collaborative efforts with the Minnesota Board on Aging and Department of Human Services involve targeting state employees for employer sponsored education regarding later life financial security. Future challenges include identifying delivery strategies to increase access to these new educational resources, working with collaborators, and gathering evaluation data.

Endnote

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The Use of Formal and Informal Financial Markets Among Black Households[1]

Employing unique household data, this article documents the use of banking services, the role of informal financial networks, and the patronage of alternative financial service businesses in Chatham, a predominantly Black community in the city of Chicago.

Sherrie L.W. Rhine, Federal Reserve Bank of Chicago[2]
Maude Toussaint-Comeau, Federal Reserve Bank of Chicago[3]

A household gains several advantages from holding a deposit account with a financial institution. In terms of time and actual expense, payments for home production and personal transactions often can be made at a lower cost. Households are shielded from risks associated with holding uninsured cash reserves and are availed with important consumer protections. In fact, there are approximately 20 laws and regulations safeguarding the consumer from unfair, discriminatory and predatory lending practices. (Board of Governors of the Federal Reserve System, 1997).

Still, a large number of households remain unbanked. These households tend to be disproportionately lower-income or minority families. Hogarth and O'Donnell (1997) find that almost 37 percent of all U.S. Black households are without either a checking or saving account. Among White households, however, they determine that less than 8 percent fall into this category. Unbanked households often rely on alternative financial services (AFS) such as check cashing outlets, currency exchanges or pawnshops to meet their liquidity and credit needs (Swagler, et al., 1995). The cost of these services have been shown to be almost twice as large as comparable banking services (Green and Lechter, 1998). It is unclear that consumers using AFS are adequately protected against unfair lending or predatory business practices, as evidenced by the increase in class action lawsuits against major check cashing companies for alleged full disclosure violations (e.g., Chicago Defender, 1999). A better understanding of consumer behavior and decision making among financial sources is needed for more effective policies aimed at meeting the needs of consumers.

As pointed out by Bond and Townsend (1996), credit services can be provided by a diverse set of institutions ranging from "informal" networks of family, friends, and social organizations to mainstream financial markets. Informal networks provide relationship-based financing often predicated on criteria different than formal financial markets. Cost advantages in information gathering, ability to utilize more effective enforcement mechanisms and potential willingness to share greater risks related to implicit or explicit credit contracts are factors associated with informal markets unlikely to be present in formal financial markets. Informal networks may be particularly well suited as a source of short-term or smaller dollar amount of funding often unavailable from formal sources. These funds, at the margin, may be quite important to lower-income households. A potentially important limitation of informal market sources, however, is its greater likelihood of being more liquidity constrained than the formal markets. As a consequence, informal markets may be circumvented or otherwise limited in their effectiveness in making credit accessible to households.

This article provides information about the use of these various sources of financing among Black households. Although a majority of households possess a deposit account, we find that a substantial number remain unbanked. Use of credit accounts, especially home-related loan products is quite limited. Informal financing appears to play an important role among households in need of income smoothing or additional assistance for the purchase of a home. In general, households patronized AFS businesses extensively. Somewhat surprising was the finding that the majority of AFS users already have a pre-existing relation with a bank. Drawing upon the findings of this study, we outline several policy implications and recommendations.

Survey Description

Chatham was chosen as the site of this study due to its distinct and well-recognized ethnic neighborhood. Chatham, located on the south side of the city of Chicago, became predominantly Black during the 1950s (Chicago Fact Book Consortium 1995). According to the 1990 U.S. Census, this community had a population of 36,779 persons. In our survey, all households are Black with an average family income of $37,726 in 1996. Median family income was $35,000, classifying Chatham as a middle-income community.

The survey instrument was adapted with very minor modifications from a survey developed for a study of Little Village, a predominantly Hispanic community situated on the southwest side of the city of Chicago.[4] The Federal Reserve Bank of Chicago sponsored the survey conducted in Chatham between 1996 and 1997.[5] The household survey universe was constructed by using a multistage full probability sample model based on the U.S. Census block groups for this community. The fieldwork resulted in the completion of 194 randomly selected household interviews.

Use of Credit and Financing

A unique feature of our survey is its collection of information about a household's response to events that caused financial distress. These responses included seeking financial assistance from formal and informal sources as well as the household's labor market and other behavior responses. The most frequently cited events resulting in financial distress included substantial unemployment or periods of unusually low income, death or illness of a family member, and large increases in living expenses.

Table 1
Household Responses to Financial Setback

Responses	All Sources of Financial Setback	Illness or Death	Unemployment	Increase Expenses
Formal Financing	8	3	6	4
Informal Financing	16	17	17	0
Use Existing Assets	20	12	11	0
Increase Labor	8	2	13	1
Reduce Consumption	13	8	12	7
Delay/Fail to Pay	16	7	16	3
Total Number of Households Responding	56 (100%)	23 (41%)	29 (52%)	14 (25%)

Notes:
Sum of responses is greater than total number of households responding due to multiple responses. Number in parentheses indicates percent of total households that experienced financial setbacks. There were 5 households that cited responses as "other."

Table 1 provides some insights into the response patterns of households facing financial distress as well as the response pattern conditioned on a specific financial setback. Overall, 29 percent of all households (56) reported having experienced a financial setback over the previous 5-year period. The most common reaction by households was the liquidation of existing assets (e.g., savings and checking accounts). Seeking financial assistance from informal sources and delaying or failing to pay debts also were frequently utilized responses. Formal sources were infrequently used when a financial setback occurred.

The household's link to the formal financial market is captured through information collected about the use of a checking and savings account, various investments and longer-term savings accounts, and holdings of credit products including various home mortgage-products and car loans. In Table 2 we highlight the use of these financial instruments by household income to ascertain whether this relation varies at different income levels. As shown, 62 percent of all households surveyed possessed a checking account and 65 percent had a savings account. In combination, 79 percent of all respondents reported having either a checking and/or a savings account. At higher income levels the proportion of households using a checking and/or a savings accounts increases from 58 percent among households in the lowest quartile to 92 percent of the households at the highest income levels. By contrast, 21 percent of the respondents had neither a checking nor a savings account. The proportion of households without a saving or checking account decreases with household income from 42 percent of households in the lowest income quartile to 7 percent among those in the highest income quartile.

In general, the proportion of households holding various types of longer-term investment/savings or retirement accounts increased with household income. A certificate of deposit (CD), an individual retirement account (IRA) or a mutual fund account was possessed by 19 percent of all respondents, while 32 percent had a retirement fund account. Although a retirement fund represents a compensation arrangement between the respondent and his/her employer, it also reflects an important long-term investment/savings linkage to the formal financial market.[6]

Over the previous five-year period, respondents had not made wide use of credit accounts, especially those related to home financing. While the age profile of this community (relatively older population) may contribute to the lackluster activity in these credit markets, it remains unclear that life-cycle effects alone can fully explain the level of credit activity observed. As shown in Table 2, 9 percent of all households had a home mortgage or refinance

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loan, 6 percent had a home equity loan, and 3 percent had a home expansion loan. Car loans were the most frequently reported loan type possessed, ranging from 8 percent among households at the lowest income quartile to 45 percent of the households at the highest income quartile. Appliance/furniture loans were held by 5 percent of all households and fell to 2 percent among the highest income households. This finding may reflect the lack of need by higher-income households to make durable goods purchases using credit and/or the unwillingness of these families to assume more costly credit terms. Finally, almost 50 percent of all respondents held at least one credit card, although we are unable to determine whether credit balances were held on these cards. The proportion of credit card holders increased with family income from 16 percent of the households in the lowest income quartile to 72 percent among families in the highest income quartile.

Table 1:
Formal and Informal Financial Sources
By Household Income Quartile

	Total Number of Households	Percent of Sample	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
Formal Source						
Financial Instruments						
Checking Account	121	62%	23%	54%	71%	85%
Savings Account	126	65%	42%	64%	71%	85%
Checking and/or Savings	153	79%	58%	82%	84%	92%
No Checking or Savings	41	21%	42%	18%	16%	8%
CD, IRA, mutual funds, etc.	36	19%	8%	13%	24%	35%
Retirement Funds	63	32%	8%	23%	48%	54%
Credit Accounts - Last 5 years						
Credit Card	94	49%	16%	51%	60%	72%
Home Mortgage Refinance	18	9%	3%	8%	18%	15%
Home Equity Loan	11	6%	0%	8%	6%	10%
Home Expansion Loan	6	3%	3%	0%	3%	7%
Appliance/Furniture Loan	10	5%	3%	10%	10%	2%
Student Loan	6	3%	0%	0%	2%	10%
Car Loan	50	26%	8%	23%	29%	45%
Informal Source						
Personal Network - Last 5 years	16	8%	13%	8%	10%	2%
Investment (home purchase)	18	9%	8%	8%	13%	10%
Alternative Financial Services						
Pawnshop	9	5%	8%	5%	3%	3%
Currency Exchanges or CCOs	148	76%	87%	74%	66%	73%
Sample Size	194	100%	24.9%	25.3%	24.5%	25.8%

Notes:
Quartile 1 includes households with family income < 17776 (n = 38); Quartile 2 includes households with family income, 17776 <= family inc < 35000 (n = 50); Quartile 3 includes households with family income, 35000 <= family inc < 60000 (n = 39); Quartile 4 includes households with family inc >= 60000 (n = 40). Percentages may not add up to 100 due to rounding.

Overall, we do not observe extensive use of informal networks as a source of financing in the Chatham community. While not widely used in absolute terms, there is evidence to suggest that informal networks play an important role among households in need of income smoothing due to financial shocks or as a means of obtaining additional assistance for home financing purposes. Of those households faced with financial distress (56 households), 29 percent (16 households) obtained loans or gifts from family, friends, or social organizations. Households at the lowest income quartile used informal networks the most, reflecting the relative importance of informal financial sources to lower-income families (Table 2).

Twenty-three percent of all homeowners in the sample (representing 18 of 77 households) obtained informal financing to purchase their home. Households in the upper-income quartiles used informal networks (primarily relatives) the most. Table 3 displays selected information about the largest financial sources used by households in the home purchase process. The majority of home-buying activity was financed primarily through the formal sector. Twenty-two bank loans were made, while 13 loans were obtained from a mortgage company. Personal savings represent the second most important primary source of funds for purchasing a home. Twelve households (representing 18 percent of those who disclosed their largest funding source) reported having purchased their home entirely from personal savings.

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Table 3
Primary Sources of Home Financing

	n	Mean Interest Rate (nominal) (%)	Mean Loan Amount ($1996)	Median Purchase Price ($1996)	Mean Household Income ($1996)
Formal					
Bank	22	7.3 (19)	82211 (21)	102210 (19)	43585 (21)
Mortgage Company	13	10.4 (11)	82613 (13)	97006 (13)	67380 (10)
Finance Company	3	10.7 (3)	61948 (3)	74223 (3)	57500 (2)
Government Agency	3	6.7 (3)	57340 (2)	76829 (3)	47500 (2)
Other Formal	5	10.5 (2)	61379 (3)	115896 (5)	37429 (4)
Undeclared Formal	1			144928 (1)	76000 (1)
Total Formal	47	9.6 (38)	78215 (42)	92734 (44)	56622 (40)
Informal					
Relatives	3	0 (3)	72962 (2)	160861 (3)	19500 (2)
Social Organization	2	4 (2)	111532 (2)	11532 (1)	1185 (1)
Undeclared Informal	3			113595 (2)	54511 (3)
Total Informal	8	2.7 (5)	92247 (4)	50272 (8)	30532 (8)
Personal Savings	12			137818 (11)	50986 (8)
No Source Reported	10			82870 (3)	49750 (8)
Total	77				

Notes:
Median year of all house purchases is 1970. Figures relate only to the single largest loan used by each household. Number in parentheses indicates reported observations used to construct means.

The informal sector plays a more limited role in home financing. A few respondents (three) obtained financing solely from relatives. An even smaller number of households (two) financed their homes through social organizations. Because the number of informal loans is relatively small, caution should be exercised when making direct comparisons. Even so, we observe that some of the loan terms differ between the formal and informal markets (e.g., lower interest rates for informal loans). Households receiving a loan through informal sources also had a much lower mean income level than households financed by the formal sector.

Alternative Financial Sources

Respondents that utilize a currency exchange, check cashing outlet, or a pawnshop are categorized as AFS business users.[7] As shown in Table 2, 76 percent of all households surveyed used a currency exchange or check cashing facility. Among households in the lowest income quartile, 87 percent utilized a currency exchange or a check cashing facility. Interestingly, 73 percent of the households in the highest income quartile also used these services, suggesting that AFS use is not limited to lower-income households.

Table 4 compares the characteristics of households based on their use of selected formal and alternative financial service sources. Column 2 displays the characteristics of households holding a checking or a savings account, while Column 3 reflects households with neither type of account. Households that patronized AFS businesses are separated according to whether or not they also possessed a checking account. In this table the AFS-related services include currency exchange or check cashing services, referred to as CCO services. Pawnshop services are excluded because of dissimilarities in services. Column 4 shows the characteristics of CCO users without a checking account, while Column 5 reflects the characteristics of CCO users with a checking account.

Consistent with other studies, these households tended to have higher incomes and were more likely to be employed, more highly educated, older, male, married, and owners of a home, car or other large assets (Column 2). Conversely, unbanked households were inclined to have lower incomes and were more likely to be unemployed, less educated, younger, female, unmarried, and without a home, car or other large assets (Column 3).

Among households in the lowest income quartile, we find that 82 percent (Column 4) are CCO users without a checking account. As expected, the proportion of these households declines at higher income levels, falling to 20 percent of all households in the highest income quartile. Overall, these findings are consistent with the view that CCO users are primarily among lower-income households without a checking account.

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Table 4
Household Characteristics
By Selected Financial Services

	Total Sample (1)	Checking or Savings (2)	No Checking and No Savings (3)	CCOs Users without Checking (4)	CCOs Users with Checking (5)
N	194	153	41	68	80
Percent of Total	100%	79%	21%	46%	54%
Gender					
Male	71	83%	17%	47%	53%
Female	123	76%	23%	45%	55%
Marital Status					
Married	71	84%	15%	33%	67%
Not Married	123	76%	24%	53%	47%
Age					
18-24	9	55%	44%	89%	11%
25-34	29	76%	24%	46%	54%
35-44	50	72%	28%	47%	53%
45-59	49	88%	12%	39%	61%
60-64	16	87%	13%	36%	64%
65 up	41	80%	20%	43%	57%
Education					
Less than HS	15	80%	20%	36%	64%
HS or equivalent	109	81%	19%	47%	53%
College and Above	43	91%	9%	20%	80%
Household Income					
1st Quartile	38	75%	25%	82%	18%
2nd Quartile	39	86%	14%	45%	55%
3rd Quartile	38	93%	7%	44%	56%
4th Quartile	40	89%	11%	20%	80%
Employment Status					
Employed	120	84%	16%	40%	60%
Retired	44	84%	16%	39%	61%
Other Not employed	18	56%	44%	67%	33%
Unemployed	10	40%	60%	80%	20%
Assets					
Home land/other	84	93%	7%	28%	72%
Car	127	90%	10%	31%	68%
Credit Cards	95	96%	4%	68%	32%

Notes:
The percentages reported in columns 2 and 3 are based on the total number of households in the sample, N = 194. The percentages reported in columns 4 and 5 are based on the total number of CCO user households, N = 148.

The majority of households patronizing AFS businesses also have a relation with the formal financial sector. As Column 5 of Table 4 shows, 54 percent of all households utilizing CCO services (a total of 148 households) also have a checking account, while 46 percent do not (Column 4). Our findings indicate that having physical access to a deposit institution does not appear to be a deterrent from patronizing AFS businesses. We are unable to identify from the survey specific products or services obtained or the reasons why banked households sought AFS businesses.[7] Clearly, additional research is needed to disentangle these somewhat puzzling results.

Summary and Conclusion

A number of facts are highlighted from our study. First, informal networks are an important potential source of financing for households in need of income smoothing or financial assistance when purchasing a home. Second, home finance-related credit from the formal market is limited. Third, a substantial proportion of households are unbanked, with neither a checking and/or savings account. Finally, AFS businesses are extensively used among households with a deposit account.

While caution must be exercised regarding the policy implications that can be drawn from any one study, our research supports several potential policy initiatives for the 21st century. We are only beginning to understand how informal networks might operate or the potentially important role that informal markets may play for particular groups of individuals. Hence, further research is needed to gain a better understanding of effective networks, especially in racial/ethnic communities. Moreover, we confirm the need to learn more about the demand for and use of formal financial products. Community development lending opportunities as prescribed by the Community Reinvestment Act (CRA), flexible consumer loan programs, and low-cost deposit accounts could prove useful in meeting the financial service needs of lower-income individuals. Educational programs that convey the benefits from having a deposit relationship and inform consumers about AFS costs appear to be warranted. Additional consumer education also may help lead lower-income households toward the formal financial market and may aid consumers in making informed financial choices.

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Endnotes

The opinions expressed in this study are the authors' and do not necessarily represent the opinions of the Federal Reserve Bank of Chicago or the Federal Reserve System.

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The Little Village survey was originally developed and funded by the Center for the Study of Urban Inequality at the University of Chicago. For a discussion of the survey instrument, see Bond and Townsend (1996).

The Chatham project also included a random survey of small business owners. See Huck, et al., (1999).

Increasingly, employer-provided retirement savings accounts are investment accounts from various equity and bond markets directly managed by the employee.

It is not uncommon for a finance company to offer credit terms for these types of products. The credit terms offered by these companies are often more costly than those offered by credit card companies.

As discussed by Caskey (1994), in several states including Illinois, firms that cash customers' checks for a fee are referred to as 'currency exchange' businesses. Hence, a currency exchange firm and a check cashing outlet function in virtually the same way, with the majority of revenues derived from check cashing fees.

As pointed out by Caskey (1997), it is possible that services provided by AFS business are uniquely different than the services offered by a deposit institution. Also, consumers may not be fully aware of the cost differential between these two types of financial service providers. This view also is supported by Fontana (1997). Other researchers such as Koonce, et al., (1996) present evidence, however, to suggest that consumers do know that price differentials exist between AFS businesses and the formal financial services markets.

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Consumers' Use of Electronic Technologies in Financial Services: A View Toward the 21st Century

Consumer's use of electronic technologies in financial services is empirically examined in this paper using the University of Michigan's 1996 Survey of Consumers. While consumer's adoption of ATM has a positive influence on adoption of direct deposit and phone banking, their use of ATM does not influence the adoption of direct payment. Factors influencing consumers' use of various electronic technologies vary according to a specific type of electronic technology.

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Background

Over the years, consumers have seen numerous changes in how they relate to their banks and other financial service providers. Some of these changes are demand-side driven: busy families want faster and more convenient ways to handle financial transactions. And some of these changes are supply-side driven: in an effort to control costs, financial service firms are turning to high tech/low touch methods to provide financial transactions and customer service.

About 85 percent of households have one or more electronic funds transfer (EFT) feature on their bank accounts (Federal Reserve, 1999). Automated teller machines (ATMs) are the most widely used EFT service; 67 percent of households report they have an ATM card, but only 34 percent report that they use it regularly (Kennickell and Kwast, 1997). In 1998, the number of ATM transactions averaged 930 million per month, up from 910 million per month in 1997. Point-of-sale (POS) transactions have also increased dramatically, growing from 120 million a month in 1997 to 150 million per month in 1998 (Federal Reserve, 1999). Some of the POS transactions use financial institutions' ATM cards, while others use branded debit cards (Visa or MasterCard "check cards").

More than half (59 percent) of all U.S. households use direct deposit for pay or benefits; nearly 80 percent of all federal benefits (Social Security payments, Veterans payments, etc.) are delivered via EFT (U.S. Treasury, 1998). However, less than one in four households (23 percent) use direct payments or pre-authorized debits for payments such as utilities or mortgages (Kennickell & Kwast, 1997).

Consumer adoption of some of the more innovative electronic delivery methods is low, but their use is growing. Banking by phone has been around for a while, but only one in four (26 percent, Kennickell and Kwast, 1997) report using phone banking. Home or personal computer banking was initiated in the mid-1980's, but is just now catching on. INTECO, a technology-related market research firm, reports that 7 million households used personal computer banking in 1998, up from 3.8 million in 1997 (INTECO, 1999). And with growing computer use, electronic bill presentment and bill payment are coming into their own; for example, CheckFree indicates they provide services to 2.6 million consumers (PRNewswire, 1999).

Stored-value or smart cards have met with mixed results from consumers. Pilot tests during the Atlanta Olympics and in Manhattan have not been successful. However, in closed environments, like the military or on college campuses, these electronic technologies seem highly successful. Pre-paid phone cards and gift cards have successfully made their way into the marketplace, indicating that consumers may be willing to think about stored-value or smart cards in more focused transactions (Kutler, 1999; Sabatini, 1999).

As banking moves to a more technologically-delivered service, consumer educators, bankers, and policy makers need to know which factors are associated with consumer's use of various electronic technologies in their financial service transactions, which groups may become disadvantaged by increased use of technologically delivered financial services, and what they can do to help consumers adapt to these changing technologies. These are the topics that we will explore in this paper.

Literature Review

Over time, the banking industry has introduced a variety of technology-based electronic banking services to consumers. Each of these electronic financial services is at a different stage of the diffusion process. Automated Teller Machines (ATMs) are the most diffused and at the late majority stages of adoption according to Rogers' classification of the adoption process (Prendergast 1993). Electronic fund transfers such as direct payments and electronic billing are, compared to ATMs, relatively new to financial customers. Telephone banking, while an older technology, is still at the early stages of diffusion.

Several theories suggest that prior experience with a particular innovation (e.g. using an ATM) influences consumers' subsequent adoption decisions of related innovations (e.g. other electronic banking technologies). First, learning theory proposes that consumer's experience with a particular product lead to an increased familiarity with other products within the same product category (Hirschman 1980; Dickerson and Gentry 1983). This increased familiarity is expected to transfer into a willingness to adopt. Hirschman (1980) explains this relationship under a cognitive resource paradigm. Consumer's adoption of a particular innovation is inversely related to the amount of cognitive efforts required to comprehend the particular innovation. Familiarity with a product class obtained through prior experience greatly reduces the cognitive effort required for other innovations in the same product class.

Familiarity induced by increased exposure can also lead to favorable attitudes (Schumann et al. 1990). Fiske (1982) and Sujan (1985) discussed the impact of prior experience in terms of category-based affect under information processing paradigm. Based on the information-processing paradigm, prior experience with a particular innovation is stored as an affective response, and when a consumer is faced with similar situations, a category-based affect is triggered and affects the current decisions. Similarly, personality and attitude paradigms suggest that certain consumers view technology-based service more favorably, thus they are more likely to adopt technological innovations (Dickerson and Gentry 1983; Dabholkar 1996).

In this study, consumers' use of ATMs is hypothesized to affect subsequent adoption of other electronic financial services such as direct deposit, direct payment, and telephone banking. Users of ATM technology, once they have adopted and used the technology, are more likely to adopt other electronic-based financial services. On the other hand, those who do not actively use ATMs are expected to be less likely to adopt other electronic-based financial technologies. Some consumers do not use ATMs, while others have tried but do not actively use them. Inactive use of ATMs suggests consumers' lack of interest in adopting other electronic technologies.

Methods

Data

We used the data from the December 1996 Survey of Consumers collected by the University of Michigan. The data contain information on household demographics, households' assessments of their current and future financial well being, the current and future state of the economy, their willingness and ability to purchase certain durable goods, and their attitudes towards using credit to purchase goods. Commissioned by the Federal Reserve Board, additional data were collected on consumer's usage of electronic banking technologies. There were 501 respondents in the Survey. Among the respondents, only households with checking or savings accounts at financial institutions that offered their customers access to ATMs were included in the analysis. In all, 419 of the 501 households interviewed were included.

Analysis

We used a two-stage analysis to determine the factors related to using specific electronic technologies. In the first stage, we estimated a model of ATM use. Given the diffusion of ATM technology in the marketplace and the potentially strong tie-ins between using an ATM and adopting other electronic technologies, it was necessary to control for ATM use in subsequent models.

In the second stage of analysis, we estimated models of electronic technology use for direct deposit, direct payment, and telephone banking. These specific electronic technologies were chosen because sufficient numbers of households were using such technologies. Only two percent of households reported using PC banking and 4.7 percent reported using debit cards; thus these two technologies were dropped from the second stage analyses.

Variables

The dependent variable of the first stage model is whether or not consumer use ATM. As explanatory variables, the cost and convenient location of using ATMs were included in the first stage model. The Survey also included eight attitudinal questions on use ATMs relative to "regular banking." Two factors emerged in a factor analysis of these variables, and the factor scores were included in the first stage model.

In addition, the demographic variables were included in both first and second stage models. Race/ethnicity, age, education, household income, marital status, were measured differently in the two stages of modeling. Region was omitted from the first stage model, but was included in the second stage models.

The dependent variables of the second stage model include whether or not consumers adopted direct deposit, direct payment, and phone banking. The parameter estimates from the first stage model were used to compute a "probability of ATM use" variable. This variable was used as a control variable in second stage models (direct deposit, direct payment, and telephone banking). A binomial attitudinal variable measuring interest in electronic devices was also included in the second stage models.

Results

Descriptive Results

Slightly over three-fifths (62.5%) of the households used ATMs and more than half (57.3%) of the households used direct deposit. Use of direct payment, telephone banking, debit cards, and computer banking were much lower for these households (35.3%, 19.6%, 4.7%, and 2.1%, respectively).

The majority of the respondents in our study sample were white (81.4%), female (60.4%), and married (63.9%). Nearly half (47.5%) of the respondents were between the ages of 36 and 55 (median age was 42), and approximately two-fifths (39.7%) had college degrees (median education was 14 years). Nearly three-quarters (74.5%) reported that they worked at least part-time. Most households (52.0%) did not have any children and one-third (33.2%) of the households were from the South. The average household income in 1995 dollars was $49,979, with a median of $42,000.

A majority (71.6%) of these respondents viewed electronic devices favorably. Only a small proportion (19.2%) of the respondents stated that ATMs were located at more convenient locations than where they could cash checks. The cost of using ATMs for cash as opposed to writing checks apparently was not a deterrent to using ATMs given that only a small proportion of respondents (11.4%) stated that ATMs cost more than writing checks.

First Stage Model – ATM Use

In the factor analysis of attitudes toward ATM use, two factors emerged: perceived convenience (saving time, better hours, more locations, etc.) and perceived risk (more frequent mistakes, difficult to correct mistakes, greater risk of being robbed, etc.). Principal factor analysis was used and the two aforementioned factors emerged. Maximum likelihood factor analysis was then run using these two factors, and the factors were rotated using VARIMAX rotation. The eigen values for the two factors were 4.4741 (perceived convenience) and 1.6593 (perceived risk). These factor scores were both positively related to ATM use; more positive attitudes towards ATM technology relative to "regular banking" increased the likelihood of using ATMs.

In the first stage model, respondents who stated that it cost more to use ATMs than to write checks and that ATMs were located at more convenient locations than where they could cash checks were more likely (2.9 times and 4.6 times, respectively) to use ATMs (see Table 1). Older respondents were less likely than younger respondents to use ATMs, and males were 1.8 times more likely than females to use ATMs. Households in the highest income category ($60,001 and up) were 2.2 times more likely to use ATMs than households in the middle income category ($30,001 - $60,000). The average predicted probability of using ATMs, 0.62, was consistent with the observed use rate (0.625), indicting that the model works well for our purposes.

Second Stage – Use of Other Electronic Banking Technologies

Influencing factors varied across different types of electronic banking technologies. Increases in the probability of using ATMs increased the likelihood of using direct deposit and telephone banking, but did not increase the likelihood of using direct payment (see Table 2). Being employed increased the likelihood of using direct deposit, as might be expected, but was not significantly related to the likelihood of using other technologies. Respondents between the ages of 18 and 35 were half as likely to use direct deposit and half as likely to use direct payment compared to respondents between the ages of 36 and 55. Increases in household income also increased the likelihood of using any of the electronic banking technologies studied.

Respondents with a high school education or less were 0.6 times less likely to use direct deposit and 0.5 times less likely to use telephone banking compared to the respondents with a college degree. Married respondents were more likely to use direct payment than non-married respondents. Households with children were 1.8 times

Table 1
1st Stage Model:
Logistic Analysis of Using ATM's

Variable	Parameter Estimates (p-values)
Intercept	1.3750 (0.2576)
Cost More	1.0765 (0.0287)
More Convenient	1.5350 (0.0015)
Factor1 (convenience)	1.1952 (0.0001)
Factor2 (risk)	1.3046 (0.0001)
Income $0 - $30,000	0.3906 (0.2834)
Income $60,001 +	0.7940 (0.0355)
Education	0.0173 (0.8099)
Age	-0.0381 (0.0046)
Working	-0.1046 (0.7721)
Married	0.2369 (0.6178)
Previously Married	-0.1614 (0.7676)
Children	-0.4559 (0.1924)
Male	0.5986 (0.0462)
Black	0.8054 (0.1287)
Hispanic	-0.1477 (0.7888)
N	377
-2 log likelihood Chi-Square for Cov	177.917 (0.0001)

Table 2
2nd Stage Models:
Logistic Analysis of Using Electronic Technologies
(parameter estimates, p values)

Variables	Direct Deposit	Direct Payment	Phone Banking
Intercept	-5.0705 (0.0124)	-5.8502 (0.0083)	-9.8434 (0.0003)
Prob. ATM Use	1.4169 (0.0023)	0.4700 (0.3112)	1.7605 (0.0042)
Like Electronic Devices	-0.2516 (0.3526)	-0.0182 (0.9487)	0.4311 (0.2341)
Working	0.5043 (0.1000)	0.2889 (0.3679)	0.2091 (0.5917)
Age 18 – 35	-0.5688 (0.0372)	-0.5810 (0.0396)	-0.3792 (0.2596)
Age 56 +	1.5630 (0.0002)	-0.2010 (0.6253)	0.3044 (0.5648)
Log Income	0.4146 (0.0335)	0.3969 (0.0596)	0.6702 (0.0088)
High School or Less	-0.5165 (0.0565)	-0.0690 (0.8064)	-0.5999 (0.0801)
Some College	-0.1750 (0.5633)	0.2262 (0.4686)	-0.4457 (0.2223)
Married	0.3555 (0.1814)	0.7613 (0.0083)	-0.0812 (0.8154)
Children	0.5782 (0.0288)	0.4914 (0.0671)	0.3170 (0.3250)
Male	-0.4798 (0.0521)	-0.1594 (0.5278)	-0.7429 (0.0159)
White	-0.3071 (0.3091)	0.2064 (0.5171)	-0.3547 (0.3401)
North East	-0.1898 (0.5515)	-0.2964 (0.3631)	0.5957 (0.1319)
Mid West	-0.1383 (0.6397)	-0.0929 (0.7879)	0.9370 (0.0117)
West	0.0296 (0.9281)	-0.5602 (0.1191)	-0.0164 (0.9710)
N	375	377	377
-2 log likelihood Chi-Square for Cov	47.811 (0.0001)	48.911 (0.0001)	53.247 (0.0001)

more likely to use direct deposit and 1.6 times more likely to use direct payment compared to those without children. Males were less likely to use direct deposit and less likely to use phone banking. Relative to living in the South, households in the west were less likely to use direct payment while households in the mid-west were more likely to use phone banking.

Simulation of Adoption of Electronic Technologies

We performed several simulations, looking at adoption by income, age, education, and race. We calculated the probability of adoption by manipulating the variable of interest while holding other independent variables constant at the mean or modal value. For example, we evaluated the effects of being in a low or high income household by assigning income values of $15,000 and $50,000 respectively, while assigning the mean probability of using an ATM (.62) and the modal value for categorical variables (e.g. since 75% of the sample worked, the variable "working" was assigned a 1). For age, education, and race, we simply evaluated the probability for each category, holding all else constant at the means or modes. Results of these simulations are presented in Table 3.

As already seen by the regression results and the odds ratios, higher income households are more likely to use these electronic technologies than lower income households. Older households are more likely to use direct deposit and phone banking, but middle-aged households are more likely to use direct payment. Minority households are more likely to use direct deposit and phone banking, but white households are more likely to use direct payment. College graduates were more likely to use direct deposit and phone banking, but persons with some college (but not a college degree) were more likely to use direct payment.

Table 3
Simulation of Adoption of Electronic Technologies

	Direct Deposit	Direct Payment	Phone Banking
Low Income ($15,000)	.52	.37	.10
High Income ($50,000)	.64	.49	.21
Age 18-35	.48	.33	.14
Age 36-55	.62	.47	.19
Age 56 and over	988	.42	.24
White	.62	.47	.19
Minority	.69	.42	.25
High School or Less	.50	.45	.11
Some College	.58	.53	.13
College Degree	.62	.47	.19

Discussion and Conclusions

In this paper, we looked at consumers' adoption of electronic technologies in the financial services field. Using data from a 1996 Survey of Consumers by the University of Michigan Survey Research Center, we find support for the theory that prior experience with an innovation leads to subsequent adoption of other innovative technologies. Adoption and use of ATMs positively influenced adoption of direct deposit and phone banking; use of direct deposit positively influenced adoption of direct payment. In addition to the adoption of other innovations, employment status, age, education, income, presence of children, gender, and region also influenced adoption of other electronic banking technologies. Thus, consumers who are younger, have lower incomes, and/or have less education will be differentially affected by the move toward electronic delivery of financial services.

Consumer educators have long been designing their outreach efforts based on the experiences of their audiences; these results confirm that this practice is especially necessary in the case of educating about electronic banking. Consumers who are already familiar with ATMs or direct deposit can more easily be "brought up to speed" on other technologies. Consumers unfamiliar with any of the electronic banking technologies may need help in learning how to manage their accounts with these services. For example, consumers many need to learn how to create a "paper trail" where only an "electronic trail" exists. Consumers may also need to be reminded of their rights under the Electronic Funds Transfer Act (and Regulation E) as they move toward more electronically-delivered banking services.

As the electronic delivery of banking and financial services continues to develop, policy makers may need to consider issues of accessibility. If low income and less educated households are less likely to access accounts electronically, then they may not be able to participate as much as they could in the financial marketplace. Already many banks are charging consumers to "talk to a teller," and it may be that the financial marketplace evolves into a tiered structure where those with substantial balances have "personal bankers," those without accounts deal with staff at check cashing outlets, and those in the middle deal with financial institutions electronically. Also, as new electronic products and services emerge, policy makers will need to review the existing consumer protection paradigm to make sure it still fits the delivery mechanisms that evolve. A balance of both regulation and education is needed to address the consumer protection issues in the twenty-first century's financial service marketplace.

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The analysis and conclusions set forth in this paper are those of the authors and do not necessarily indicate concurrence of the Board of Governors, the Federal Reserve Banks, or members of their staffs.

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Influencing Issues of the Consumer Interest: Roles and Opportunities for Researchers, Educators, and Partners in the Media

The workshop included an example of a social journalism project Poverty Among Us™ with the Saint Paul Pioneer Press Newspaper and researchers at University of Minnesota. The report includes background information on how to become involved and some of the principles to use in working as a partner with the media. Citations for copies of reprints are included.

Jean W. Bauer, University of Minnesota[1]
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Introduction

Dissemination of research-based information for use by consumers is part of the mission of land-grant universities. Conventionally, research-based information is shared at professional meetings such as ACCI and in our professional journals. Also through Cooperative Extension, research findings are shared via multi-media including on-site sessions with learners. Less frequently is the information disseminated through the mass media. Yet, the mass media reaches many more potential users of the findings. Sometimes research findings are announced in a news release and editors may choose or may not choose to print. Other times there may be a personal connection that facilitates the dissemination of the research with the public. Social Journalism, also called Civic Journalism by many is a way to work with the media to disseminate and interpret findings for the consumers of the mass media. Since consumers get much of the information about current issues from the mass media, the connection between researchers and educators and the media has potential for impact. The media is particularly adept at increasing awareness, which is a first step in any issue analysis or response.

Poverty Among Us™ was a social journalism project on which Drs. Bauer and Braun and Ms. Olson worked with the St. Paul Pioneer Press Reader Advocate, Community Outreach Coordinator and Student Intern as framers of the project during the winter and spring of 1998. In order to share the impact of the award-winning project, we will describe what we did and some of the content of the project. The details are shared to understand how our consultancy grew into a much larger role and a connection for long term working relationship with the media. In the beginning, there was no sense of the resulting impact of the working relationship. All that the university team wanted was recognition for help in framing the outcome. The team was already recognized for their work in framing the concept from welfare to well-being. We had something to share with the newspaper to help accomplish a greater goal of assisting families and communities around issues relating to welfare and poverty.

Shortly after the project began, Dr. Braun suggested to the newspaper team that this had the potential to be an award-winning series. It won two national awards in winter of 1999. This was said in one award announcement:

> "Poverty Among Us" is an illuminating look at the underclass that combined detailed reporting with strong storytelling and compelling photography. As a distinguished example of civic journalism, it provided some wonderful hooks. "Do the Math," what people have to live on - is a just one example. Civic participation moved to a new level with the concepts of a tool kit, discussion guides and a book club, reinforcing the ideas that an informed citizenry is best equipped to deal with pressing public issues.

Another article "St. Paul, San Francisco and Portland News Organizations Win 1999 Batten Prize for Excellence in Civic Journalism" heralded the project. They said:

> In 'Poverty Among Us' the St. Paul Pioneer Press chronicled, once a month for seven months, what it was like to be poor in Minnesota at a time when the official welfare safety net was replaced by welfare-to-work programs. The paper told the story through the eyes of schoolchildren, the working poor, immigrants and others. But the paper didn't stop there. It tried to pull readers into a conversation about poverty by conducting a major public opinion poll on attitudes towards poverty, by forming book clubs on the literature of poverty with the St. Paul

Public Libraries, by publishing interviews with the poor on its web site and by providing discussion guides and tool kits for those wanting to organize discussion groups (http://www.pewcenter.org/batten/pr1999.html).

Development of Relationships between Researchers, Educators, and Media

Some literature supports the principles that were practical with the cooperative exchange between the researchers, educators, and partners in the media. The media often address issues but do not include what the community can do to understand and be involved with the changing of the fabric of the community. A report by the Casey Journalism Center for Children and Families included an analysis of the Welfare Reform's coverage in the media. Past articles included budgets—federal, state and county were 21.6%, the federal to state government control shift 17.4%, levels of employment 15.9%; children's well being 15.5%, adult behaviors (seeking work) 11.6% and welfare caseloads 11.5%. The poverty level of the families involved or the impact of the situation on the communities was not mentioned as results from the journalism (Domiquez-Arms & Prunty, 1998).

Information on civic journalism or social journalism provides some guidelines for the media: it is important to separate rhetoric from reality. To do this, scrutinize data and research thoroughly, and develop a reservoir of sources. Study policy, theories, laws and research that bear on the topic of interest. Make the stories as local as possible. To do that, the staff at the Saint Paul Pioneer Press Newspaper teamed themselves with the team from the University of Minnesota, and local community leaders to make sure that the project was grounded and met their objectives of: greater understanding of changes in welfare policy; increased awareness of realities people face in the transition from welfare to work; identification of changes on individuals, organizations and communities, and the generation and documentation of comments and ideas.

Poverty Among Us™ Project

This section summarizes the seven months series and gives examples of how the University of Minnesota team worked with the newspaper in shaping the project. The stories over the series were developed by the 7 reporters and several photographers with the editors of the paper. The Reader Advocate, Nancy Conner, Patricia Peterson, and Maia Werner, the two community consultants, met monthly with us to frame and discuss the project from the connection to the community and with the emphasis of making a difference. They viewed us as very knowledgeable about the population and having connections to the community through direct programming. Sometimes the reporters were in the meeting for a short period, when the discussions connected directly to what they were doing. Often the reporters would call us to see if we had resources for them to use. For example, they used extension materials for developing the family budgets in the stories. In addition, a column on the tax credits was requested following of our lengthy discussions.

An outreach intern from the newspaper coordinated community conversations. She prepared a notebook that included a group discussion guide, background information, discussion questions, and book club information where additional information could be found at the public libraries. The notebook included some extension materials developed for other reasons such as the Braun and Bauer (1997) Citizen's Guide for Understanding Welfare-to-Well-Being. It included how to understand the situation (legislation, community values of well-being, need among children and families, capacity to provide assistance, and cost and benefits of alternatives), consider involvement (costs and benefits), and acting on reflective thinking. Also included are five components for understanding the situation: information, issues, impacts, implications, and imperative.

A poll conducted by the Wilder Research Center, Amherst H. Wilder Foundation, for the newspaper was used to anchor the stories. In the 7-county metro area around Minneapolis and St. Paul, 1202 adult residents were interviewed from December 13, 1997 to February 18, 1999. The first of the series ran three days after the poll with the topic: The Road Out of Poverty. The story used some of the poll information to share the attitudes of the people and indicate that the attitudes about poverty and its solutions are deeply rooted in a Midwestern work ethic. The paper used the poll to raise questions about the community, the people, the businesses, and schools where everyone is familiar with their own situation. They put forth 6 benchmarks to measure poverty. The traditional items were used: poverty rates, children in poverty, the working poor, urban poverty, poverty of minorities, and welfare caseload. These were presented with the usual type of graphics we are accustomed to seeing in our media. St. Paul, Minneapolis, and suburbs were the areas highlighted for sharing during the seven monthly segments.

Part 1 of the series was "The Road Out of Poverty." The introduction was framed in self-sufficiency language. "New laws have been designed to move Minnesotan off welfare, and, it is hoped, into self-sufficiency. But leaving poverty behind is a complicated process. Pen Em is like many Minnesotans who face new challenges as they try to make they way out of poverty." This story told of a Hmong grandmother who is 47 years old and lives with 3 children still at home, and 3 grandchildren. One of her children fits the popular image of a single mother with children and under 18 years old. All seven people live on $1400 per month. She baby-sits for several other grandchildren that her adult children drop off during the day while they work. The article asked questions for the community conversations that were organized by the intern with the St. Paul Pioneer Press.

Part 2 — "Barely Making It" told a story of life above the poverty line—barely. "Lavern Grayer, works long, hard hours with few benefits to keep her family off welfare. Her life of the working poor—the grim interlude between welfare and self-sufficiency, where a single illness or family crisis can wipe out progress." The 41 year old mother of four works 11 hours a day at a fast food establishment, plus 500 hours of overtime a year. All of this plus tax credits enabled her to take home about $20,500, just above the poverty line. This article had questions for the stakeholders. The statement asked "Ninety percent of Minnesotans aren't poor. Beyond general sympathy, what interest does the majority have in the well-being of the less fortunate 10 percent?" Interests were included for taxpayers, businesses, charities and religious congregations, and neighborhoods. The university team recommended the merits of the discussion using a system approach and allowing for everyone to find space in a discussion that shifted from welfare to well-being, a theme we had been using for over a year.

The examples and pictures for this segment, in addition to the African American 41 year-old working mother, were a single dad with 3 children making $1110 a month with access to food stamps, and a 38 year old mother from rural Minnesota who was raised in a middle-class home in one of the better off suburbs, but dropped out of high school and married as a teen. Now after fleeing an abusive marriage, she lives in a 25-year old mobile home and drives a school bus for a net monthly income of $650 to $850 a month. Another example was a couple living on unemployment and the wife's part-time job for $770 a month. They were 27 year old high school graduates from the Iron Range, traditionally an economically depressed part of the state. During the good season (non snow) he is a employee of a roofing construction company, and she cares for their 1,3, 4 year old children. When he is unemployed, she works and they wait out the rough times. The discussion topics for the groups were around working poor and focused on the consequences and solutions for adults, teens, and children.

Part 3 — "The Undertow: The Legacy of Family Poverty" was on teen pregnancy and family history of poverty and efforts to rise to self-sufficiency. This part addressed-- How can we interrupt these forces? "Among the myriad obstacles people in poverty face are hidden forces like a family heritage that passes on the poverty from one generation to the next." One story was of a 17 year old, who shares her bedroom with her 13 month old son in her mother's home. She balances parenting, alternative school, work, and her limited social life as she plans a means to get to college so that she can provide for herself and son with marketable skills. The article asked questions about kids having kids and tells stories of an African American, 28 year old mom of 6 children who maintains a 3.6 GPA at a community college as a means out. She moved to Minnesota from Cabrini-Green in Chicago, Il. because she needed a better situation. The focus for the community groups was on teen pregnancy and poverty for adults, teens, and children. Information of places where volunteers are matched with welfare families was part of the story.

Part 4 — "When Poverty Comes to School" discussed how education is supposed to be the great social equalizer, but poverty taxes poor students in ways that affects their lives and the community. Schools have learned that poverty and problems are not left at the school door. The research about children and school achievement was included and facts about children receiving free reduced-priced school lunches and dropping out of school as examples of hidden poverty. The article talked about children in school whose families lack cars and computers, so low-income children are isolated in schools with both affluent and low-income children. The children are quiet and not assertive when they don't pal around after school with other children report the teachers. One-parent families are stretched with working to make ends meet, and so the socialization of children get pushed lower. Constant moving is a problem for the children in school as well as for others. The article talked about the citizen participation in the political process for adequate schools and the opportunities for volunteerism with children. The discussion was around "why should we care if there is poverty in schools?" Ideas and statements were for educators, parents, students, businesses, and homeowners. Again the systems approach was very evident and the discussion of the interaction of taxes and school quality and property values of neighborhoods. In this segment a story was included on the University of Minnesota Extension Service, Family Nutrition Program and its contributions.

Part 5 — "A Foot in the Door" The welfare-to-work transition, along with a tight labor market, has employers willing to train people they might otherwise ignore. Such programs raise the stakes for both would-be workers and potential employers. The story was of Pao Vang's experience with a manufacturing complex that is training and hiring immigrants. Manufacturing, hospitals, and high-tech firms are competing for immigrants, welfare participants, and other job applicants once considered too much trouble to hire. Instead, these companies know that this is smart business to eliminate the formal barriers like tests and replacing them with pre-training for applicants in basic job skills. Some offer English on the job. The story tells about Pao's 16 year old daughter that works as a part-time cashier. It outlines the differences of a parent's perspective for school and young people's desire for fun. Finding low-cost housing near the jobs in the suburbs is a major barrier for participants on welfare. One story was about a class action suit to move families from public housing, without places for them to go with their families. A mother of 3 teenage sons found housing outside of the concentrated poverty areas and she shares how the community helped her to have a new safety net. She had looked at 80 different places in last 3 years trying to find housing for her family. Housing is one of the major issues for the community and the poverty among us.

Part 6 – "Lacking Support" segment was about child-support collections and how the government vowed to ease the burden. Little progress has been made, even in Minnesota, which leads the nation in aggressive collection. Stories included the struggle to get child support payments in arrears, current concerns when the parents are trying but the person owing child support does not make enough money to pay the support. The poll included information about divorce rates and child support in the Twin Cities. Stories were about children who want to have Dad to talk with and share. The information for the community included where to get help with child support collection.

Part 7 – "Antidotes to Poverty." This was a community report of the response to poverty, the consensus on a myriad of solutions to poverty. The community group discussions occurred over the six months. A Visions for Community Forum was held for all the groups. Dr. Bauer was a participant along with other community leaders and the director of Minnesota Family Investment Program (our welfare reform program). Brainstorming had occurred as to what could be accomplished with the community vision. The theme "It's in our Hands," a suggestion from our team, became the call for action. A mission statement including where we want our community to go was developed at the forum and printed as part of the last of the series. The university team was involved in the final editing and made sure some futuristic ideas, such as Individual Development Accounts, were included in solutions.

A Community Action Pack for groups to use was developed following the series. The university team (Braun, Bauer, and Olson) were listed at the top of the acknowledgments. It was extremely rewarding to know that we were part of the team to change the face of the poverty discussion for St. Paul, Minnesota. Working with the media in a role of framer rather than asking them to print something from our research or educational program has gained us long-term working relationships. As the awards were given this Spring, Dr. Bauer participated at the invitation of the Saint Paul Pioneer Press.

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Endnotes

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Open Consumer Education Forum: What Works in Consumer and Family Finance Education

At the Invited Panel Session #9: Open Consumer Education Forum, a sharing of classroom activities that make courses interesting for both the students and the instructor took place. Approximately 25 participants met and shared which learning activities worked best for them.

Pamela N. Olson, University of New Mexico[1]
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Introduction

The American Council of Consumer Interest (ACCI) has been since 1953 and remains today, the leading membership organization for academics and other professionals involved in consumer and family economics. The mission of ACCI "is to provide a forum for the exchange of information about consumer issues and family economics to improve the well-being of the individuals, households and families" (ACCI web site). On Friday, March 26, at the 45th Annual Conference of ACCI, that is what took place.

At the Invited Panel Session #9: Open Consumer Education Forum: What Works in Consumer and Family Finance Education with Elizabeth Dolan, University of New Hampshire, presiding Pamela Olson, University of New Mexico, led an open discussion. Participants shared the classroom activities and assignments that make these courses interesting to both the students and the instructor. Approximately 25 individuals, educators and students, met and exchanged teaching ideas and discussed the possible implications of these learning experiences.

Below is a brief listing of some of the ideas shared. We thank all of you who helped to make this session what it was.

Teaching Ideas

Incorporating Technology in the Classroom

Several examples of how the web technology has been incorporated into the teaching of courses included:

1. Building links into the course outline. By having an outline all ready on a web site, links to other relevant sites, i.e., *http://www.cpsc.gov*, could be placed by the date when the topic of *Product Safety* was planned to be discussed. Instructors could develop assignments which would require students to visit the particular web site or simply have the link for information purposes.
2. Placing student handouts on the web. This technique is really a time saving technique in that the instructor would not have to continue to take handouts back to class for absence students or the student would not have to make the trip to the faculty member's office to pick up the missed handout.
3. eweb. Features of eweb include Bulletin Board and Chat Rooms. Careful planning is required to get and maintain an active eweb course. One idea for "Chat Room" was to establish times for a "chat" the night before an exam to answer questions students might have after studying. Others have required students to post a minimum number of messages related to a particular topic and respond to other students' postings. Size of class might determine the minimum number. Another idea was to post a comment as a lead in for discussion at the next class meeting.
4. Projects on line. The University of Illinois has a "Financial Risk" project on the web. The address is *http://www.urbanext.uiuc.edu/risk/index.html*. There are projects at this site as well and could be incorporated into a personal family financial management course. Extension universities appear to have developed more material in this area.
5. Power Point Presentation. Often textbook distributors are providing ready-made Power

Point presentations to instructors. These could be made and distributed to students.

6. Resources on-line. Provide each student with a case study and have them "surf the net" for resources that could be available to that family's particular situation.

Balance Sheets and Budgeting

Concerns about privacy were discussed and how to make budgeting and related assignments mean something without infringing on a person's privacy. Several ideas were presented in order to avoid the awkwardness of personal financial information. One suggestion was to have the student report only percentages not actual amounts. Another idea was to meet and discuss the project individually with each student, but never actually have possession of the materials for any length of time. One instructor had the students drop off their projects and pick them up at her office in order to maintain confidentially. Other ideas included using case studies, general, rather than detailed budget categories, or only collecting summary information at the end of the assignment about planning and goal attainment. Another idea was to expand on the "Balance Sheet Budget" was requiring the student to put together a "File Drawer" which would include all the legal documents and/or important papers a family/individual might need, i.e., birth certificates, will and the like.

Mutual Funds

The main questions surrounding any mutual funds assignments was how to make it more palatable to the student. Several ideas were presented. These included the following:

1. Model the assignment in class.
2. Have students review the basic decision making process to select the mutual fund.
3. Have a two-part assignment; Part 1 would include a basic outline, reviewed by their peers and the second part would be the only turned in and graded part.
4. Do the assignment with a "buddy."
5. Make sure the students understand what will be graded.
6. Have a guest speaker to make the assignment more "real world."

Other Ideas

Given that the consumer movement by definition is one of advocacy two other suggestions, one dealing with volunteering and the other with public policy, seemed to fit the philosophy of the field. The first suggestion was to provide for the option of volunteer work within the community, "service learning." For some students this would provide some first hand experience about their community while providing excellent public relations for the university. Several ideas were shared demonstrating how public policy could be included in a classroom. It was suggested that any paper be reviewed at several stages, especially at the early "problem definition stage." Another assignment was to have the student write "A Letter to the Editor" concerning a local consumer issue.

One of the goals of ACCI is "to advance knowledge by identifying issues, stimulating research, promoting education, and informing policy" (ACCI web site). This session provided opportunities for all of those activities to take place. The professional development which makes us better educators also helps to advance the consumers' interest. And again, thank you to all who shared and participated.

References

American Council on Consumer Interest. Web site. http://riker.ps.missouri.edu/DH/ACCI

Endnotes

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A listing of web sites was distributed that could be incorporated into a consumer decisions course. If you would like a copy of this list contact Pam Olson at pamo@unm.edu. It is also planned to have the course outline for FS 244 Consumer Decisions on the web by July. Visit the Family Studies web site, accessed through the University of New Mexico Home Page at *http://unm.edu*, for the outline.